

USER MANUAL

Manual number
PTI-31-03/11/07/A



Counting - labelling scales with PUE C41H indicator



MANUFACTURER OF ELECTRONIC WEIGHING INSTRUMENTS

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1. INTENDED USE

Counting-labelling scales are intended for counting piece soft the same mass and, in connection with label printers, labelling. Software includes databases of: operators, assortment, labels, materials, contractors, weighings. Barcode scanner can help to find quickly a required product.

Accessible functions for counting pieces:

- Determining of a unit mass by weighing (scale accuracy),
- printing basic labels, cumulative labels, cumulative labels of cumulative labels (cc labels),
- cooperation with barcode scanner,
- possibility of connecting an additional platform.

Functions:

- Tarring within the whole measuring range,
- Inscribing tare value,
- Automatic tare,
- Automatic print,
- Continuous transmission,
- Printout configuration (stable/immediate),
- Designing printouts,
- Minima mass,
- Force measurements in Newtons,
- Cooperation with computers,
- Cooperation with printers,
- Cooperation with external industrial buttons ZERO, TARA, PRINT,
- Cooperation with a barcode scanner,
- Cooperation with a transponder card reader,
- Totalizing,
- +/- control (checkweighing),
- Deviation in percents,
- Top mass latch,
- Dosing,
- Counting pcs,
- Weighings animals.

User functions may have attribute of accessibility. For this reason it is possible to adjust scale to individual needs to provide access to only these functions which are currently needed. Attribute determination accessible / inaccessible is possible in user menu and described in further part of manual.

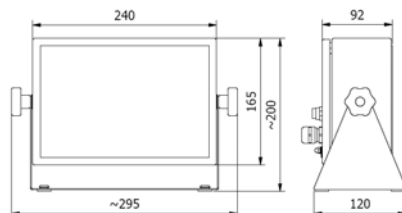
2. PRECAUTIONARY MEASURES

- A. Please, read carefully this corrected user manual before and use the device according to its intended use.
- B. If the device is about to operate in a strong electrostatic field (e.g. printing houses etc.) it should be connected to the earthing. Connect it to the clamp terminal signed \perp .
- C. Devices that are to be withdrawn from usage should be sent back to the producer or in case of own utilization do it according to the law.

3. WARRANTY CONDITIONS

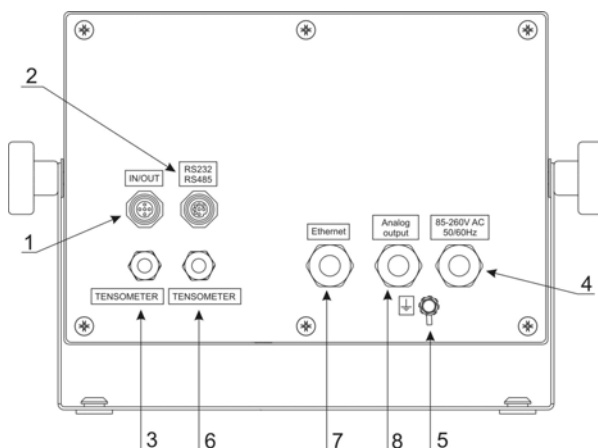
- A. RADWAG is obliged to repair or change those elements that appears to be faulty because of production and construction reason,
- B. Defining defects of unclear origin and outlining methods of elimination can be settled only in participation of a user and the manufacturer representatives,
- C. RADWAG does not take any responsibility connected with destructions or losses derives from non-authorized or inappropriate (not adequate to manuals) production or service procedures,
- D. Warranty does not cover:
 - Mechanical failures caused by inappropriate maintenance of the device or failures of thermal or chemical origin or caused by atmospheric discharge, overvoltage in mains or other random event,
 - Inappropriate cleaning.
- E. Loss of warranty appears after:
 - Access by an unauthorized service,
 - Intrusion into mechanical or electronic construction of unauthorized people,
 - Removing or destroying protection stickers.
- F. The detailed warranty conditions one can find in warranty certificate.
- G. Contact with the central authorized service: +48 48 384 88 00 ext. 106 or 107.

4. MAIN DIMENSIONS



Main dimensions of PUE C41H

5. DESCRIPTION OF CONNECTORS



Terminal connectors

- 1 – I/O connectors
- 2 – RS232, RS485 connector
- 3 – Tensometer gland
- 4 – Power supply gland
- 5 – Earthing terminal
- 6 – Additional platform gland (option)
- 7 – Ethernet gland (option)
- 8 – analogue output gland - voltage or current loop (option)

NOTICE

In accordance to the number of mounted modules the number and the placement of glands and connectors can vary. Connectors and glands mentioned in the standard solution appears in every option in the same place regardless of the option.

6. UNPACKING AND MOUNTING

- A. Take the device out of the package,
- B. Put the scale on an even stiff ground,
- C. Level the platform using an external or internal level condition indicator. Use levelling feet to do it.




level - OK



level incorrect

7. GETTING STARTED

- Switch off the scale using  – keep pressing it for about 0.5 sec,
- Wait for the test completion,
- Then you will see zero indication and following pictograms displayed:



- zero



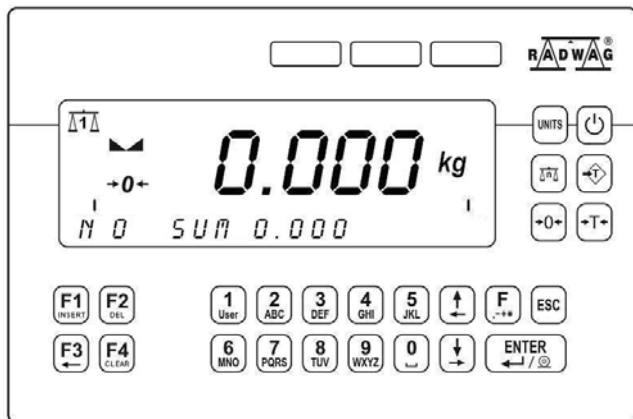
- equilibrium

kg

- weight unit

If the indication is not zero – press zero button.


8. KEYBOARD








9. PICTOGRAMS



















N.O.	Pictogram	Description
1.		Zero indication (Autozero zone)
2.		Equilibrium
3.	kg (g)	Weighing mode
4.		Battery/accumulator
5.	Net	Tare has been introduced
6.	Min	Lower threshold
7.	OK	Proper mass
8.	Max	Upper threshold or TOP mode
9.		Counting pcs
10.	%	Weighings in percents
11.		Animals weighings
12.		Dosing/filling
13.		Bargraph
14.		First platform
15.		Second platform
16.		Second range of weightings'

9.1. Battery charge indication

 pictogram is situated in the upper right corner informs about the discharge level or charging process:

-  pictogram blinks: accumulator damaged or no accumulator,
-  pictogram displayed continuously: it is charge between 70% and 100%,
-  pictogram displayed continuously: it is charge between 30% and 70%,
-  pictogram displayed continuously: it is discharge (less than 30%), connect to the mains to charge,
- Internal elements of  pictograms are displayed in sequence: charging.

10. FUCTIONS OF KEYS

Keys	Description
	Turning on/off the scale
	Toggling between weight units
	Changing active platform
	Inscribing tare value
	Zeroing
	Tarring
	Function key (entering the menu)
	Leaving a function without saving or reaching a higher level of the menu
	Printing out the result or confirming some entered data
	Selection / viewing of articles from the assortment database
	Selection purpose variables
	N/A
	N/A
	Work mode selection
	Log out
	Inscribing a batch number (6 characters)
	Inscribing thresholds (MIN, MAX)
	Statistics overview

Notice:

After pressing **-F-** functions of keys change while in the menu.
The way of using them is described farther.

11. MENU - PARAMETERS**11.1. Overview of parameters**

The menu has been divided into **10** basic groups. Each group has its individual name progressive starting with the capital letter **P**.
Names of groups and their contents are shown below.

PARAMETERS**P 1 SCALE PARAMETERS**

P 1.1 PLATFORM 1 PAR.	
P 1.1.1 FITER	AVERAGE
P 1.1.2 MED. FILTER	YES
P 1.1.3 LO THRESH.	20 d
P 1.1.4 TARE MODE	STDRD
P 1.1.5 START UNIT	kg
P 1.1.6 AUTOZERO	YES
P 1.2 PLATFORM 2 PAR.	
P 1.2.1 FITER	AVERAGE
P 1.2.2 MED. FILTER	YES
P 1.2.3 LO THRESH.	20 d
P 1.2.4 TARE MODE	STDRD
P 1.2.5 BASIC UNIT	kg
P 1.2.6 AUTOZERO	YES
P 1.3 FACTORY NO	0

P 2 COM PORTS PARAMETERS

P 2.1 RS 485	
P 2.1.1 BAUD RATE	9600
P 2.1.2 DATA BITS	8
P 2.1.3 PARITY BIT	NO
P 2.1.4 STOP BITS	1
P 2.2 RS 232 (1)	
P 2.2.1 BAUD RATE	9600
P 2.2.2 DATA BITS	8
P 2.2.3 PARITY BIT	NO
P 2.2.4 STOP BITS	1
P 2.3 RS 232 (2)	
P 2.3.1 BAUD RATE	9600
P 2.3.2 PARITY BIT	NO
P 2.4 ETHERNET	
P 2.4.1 COMM MODE	SERVER
P 2.4.2 IP ADDRESS	192.168.0.2
P 2.4.3 SUBNET MSK.	255.255.255.0
P 2.4.4 GATEWAY	192.168.0.1

P 2.4.5	LOCALPORT	4001
P 2.4.6	HOST IP	192.168.0.3
P 2.4.7	HOST PORT	2000
P 2.4.8	TIMEOUT	60
P 3 DEVICES		
P 3.1	COMPUTER	
P 3.1.1	COMP.PORT	NO
P 3.1.2	ADDRESS	1
P 3.1.3	COMP. PRINT	NONE
P 3.1.4	BASIC TRS.	YES
P 3.2	PRINTER	
P 3.2.1	PRINT PORT	NO
P 3.3	BARCODE SCANNER	
P 3.3.1	BARCOD. COM	NO
P 3.3.2	START	0
P 3.3.3	LENGTH	0
P 3.4	TRANSP. CARD READER	
P 3.4.1	READER COM	NO
P 3.5	ADDITIONAL DISPLAY	
P 3.5.1	DISPL. PORT	NO
P 3.5.2	DISPL. TYPE	LCD
P 4 DATE / TIME		
P 4.1	DISPL. TIME	* FUNCTION *
P 4.2	SET TIME	* FUNCTION *
P 4.3	DAT. FORMAT	YY-MM-DD
P 5 PRINTOUTS		
P 5.1	AUTO. PRINT	WHEN STAB
P 5.2	STAB. PRINT	YES
P 5.3	CHECKWEIGHING	NO
P 5.4	PRINTOUT	STANDARD
P 5.5	PRINTOUT 1	* FUNCTION *
P 5.6	PRINTOUT 2	* FUNCTION *
P 5.7	PRINTOUT 3	* FUNCTION *
P 5.8	PRINTOUT 4	* FUNCTION *
P 6 DATABASES		
P 6.1	LOGGING	NO
P 6.2	EDITION	ADMIN
P 6.3	ANON. ACC.	ADMIN
P 6.4	PASS. TYPE	NUM
P 6.5	CODE TYPE	NUM
P 6.6	STATISTICS	GENERAL
P 7 WORK MODES		
P 7.1	MODE ACCES.	
P 7.1.1	WEIGHING	YES
P 7.1.2	TOP	YES
P 7.1.3	COUN. PCS	YES
P 7.1.4	CHECKWEIGH.	YES
P 7.1.5	ANIM. WEIGH.	YES
P 7.1.6	DOSAGE	YES
P 7.2	ANIM. WEIGH	
P 7.2.1	WEIGH. TIME	15

P 7.3 DOSAGE		
P 7.3.1	DOSING NAM.	1
P 7.3.2	DELAY	5
P 7.3.3	CHUTE TIME	5
P 7.3.4	OUTPUT MOD.	1_2
P 7.4 LABELLING		
P 7.4.1	C. LABEL	KEY
P 7.4.2	CC LABEL	KEY
P 7.4.3	N 1	0
P 7.4.4	M 1	0.000
P 7.4.5	N 2	0
P 7.4.6	M 2	0.000
P 7.4.7	EAN PNT. PS.	3
P 7.4.8	AUTO COR.	NO
P 8 I/O CONFIG		
P 8.1 EXTERNAL BUTTONS		
P 8.1.1	TARE BUTT.	NO
P 8.1.2	PRINT BUTT.	NO
P 8.1.3	ZERO BUTT.	NO
P 8.1.4	START BUTT.	NO
P 8.1.5	STOP BUTT.	NO
P 8.1.6	EXT. START	NO
P 8.1.7	TERM. BUTT.	NO
P 8.1.8	CHUTE PERM.	NO
P 8.2 OUTPUT CONF.		
P 8.2.1	MIN	NO
P 8.2.2	OK	NO
P 8.2.3	MAX	NO
P 8.2.4	STABLE	NO
P 8.2.5	THRESH 1	NO
P 8.2.6	THRESH 2	NO
P 8.2.7	CHUTE	NO
P 9 OTHER		
P 9.1	LANGUAGE	ENGLISH
P 9.2 DIODES		
P 9.2.1	LED POWER	100%
P 9.2.2	RED DIODES	NON-STAB.
P 9.2.3	GREEN DIOD.	STABLE
P 9.3	POWER SAVE	NO
P 9.4 BACKLIGHT		
P 9.4.1	BL MAINS	YES
P 9.4.2	BL BATTER.	100%
P 9.5	BEEP	YES
P 9.6	SOFT. VER.	WTLL 1.4.4
P 10 USER CALIB.		
P 10.1 PLATF. 1 CALIB		
P 10.1.1	STRT M. ADJ.	
P 10.1.2	CALIBRATION	
P 10.2 PLATF. 2 CALIB		
P 10.2.1	STRT M. ADJ	
P 10.2.2	CALIBRATION	

11.2. Navigating within the menu level

Use keyboard to browse the menu.

11.2.1. Keyboard



Entering the main menu, special characters in the editing field



Moving up (left)



Moving down (right)



Adding records in a database
adding characters in an editing field
Inserting reference mass of counting pieces



Clearing the editing field
Erasing a record in a database
Selecting and editing general purpose variables



START of dosing procedure
START of weighings animals
Deleting characters in editing field
Selecting contractors in the counting pieces mode



Clearing editing field
deleting database
zeroing statistics
Printouts of c labels and cc labels in the counting pieces mode





Entering submenus
entering parameters
confirming changes



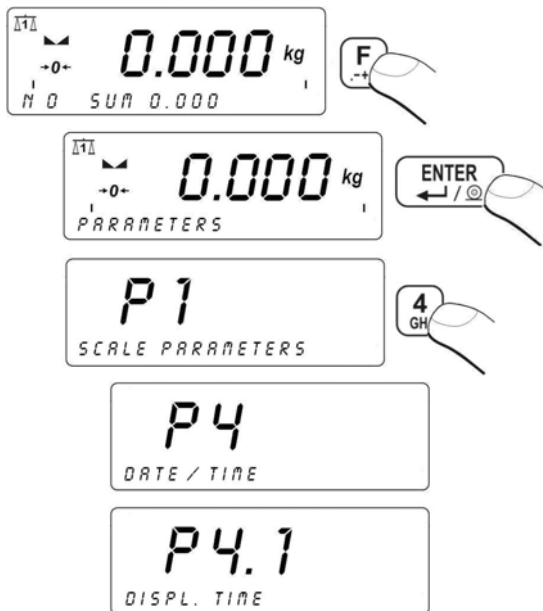
Skipping changes
Reaching higher level of the menu
Cancelling of **Automatic correction** of unit mass
in **counting pieces**

11.2.2. Quick access

It is possible to move quickly within the parameters' menu using

 to .



Procedure:



11.3. Return to weighing



Press , until you see **SAVE CHANGES ?**. Then you press:


 – confirms changes or  – skips changes. Then the scale returns to weighing.

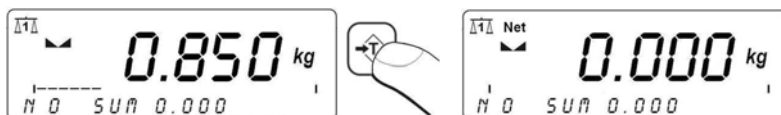
12. WEIGHING

Put a load on the pan. When  displays, you can read the measurement.

12.1. Tarring

In order to determine the net mass put the packaging on the pan.

After stabilising press -  (**Net** pictogram will be displayed in the left upper corner and zero will be indicated).



After placing a load on the weight pan net mass will be shown.

Tarring is possible within the whole range of the scale. After unloading the pan the display shows the tarred value with minus sign.



Notice:


*Tarring cannot be performed when a negative or zero value is being displayed. In such case **Err3** appears on the display.*

12.2. Inscribing tare value

You can also inscribe a tare value:

Procedure:


While in weighings mode:

- Press ,
- In the lower line you will see an editing field:




- Inscribe the tare value:



- Press ,
- The scale return to weighings mode The inscribed tare value can be seen on the display with „-“ sign.

Tare can be inscribed anytime in weighings mode.

12.3. Zeroing

To **ZERO** the scale press: .

The scale will display zero and following pictograms: $\rightarrow 0 \leftarrow$ and .

Zeroing is only possible within the scope of $\pm 2\%$ of full scale.

While zeroing outside the scope of $\pm 2\%$ you will see **Err2**.

Zeroing is possible only in stable state.

NOTICE:

*Zeroing is possible only within $\pm 2\%$ of full range around zero. If the zeroed value is beyond the interval of $\pm 2\%$, **Err2** is displayed.*

12.4. Weighings in two ranges

Switching between the **I range** and the **II range** happens automatically (exceeding Max of the **I range**).

Weighings in the second range is signalled by a pictogram in the top left corner of the display.

Then weighings is done with the accuracy of the **II range** to the moment of returning to zero (autozero range $\rightarrow 0 \leftarrow$) where the scale switches back to the **I range**.



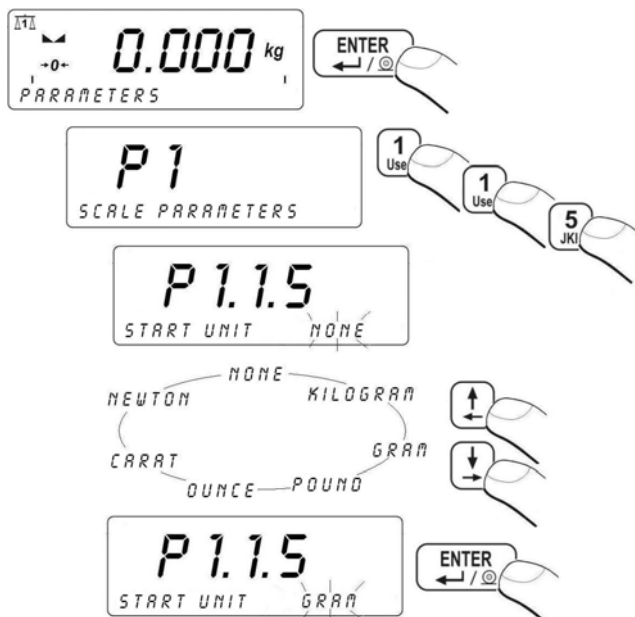
12.5. Toggling between weight units

12.5.1. Selection of basic unit

This function sets the unit that will be set after powering on.

Procedure:

- While In weighings mode press **F** and then:



Selection:

- When the main unit is [kg], users can select among: [kg, lb, oz, ct, N, g] , for verified scales [*lb, oz, N*] are not accessible;
- When the main unit is [g], users can select among: [g, kg, lb, oz, ct, N] , for verified scales [*lb, oz, N*] are not accessible.

12.5.2. Toggling between weight units

Press the **Units** key to toggle between weight units.



Accessible units:

- When [kg] is the basic unit, users can toggle between: [kg, lb, oz, ct, N, g]. For verified scales [lb, oz, N] are not accessible;
- When [g], is the basic unit, users can toggle between: [g, kg, lb, oz, ct, N] For verified scales [lb, oz, N] are not accessible.

Notice:

The terminal always starts working with the main (calibration) unit.

12.6. Switching between platforms

If a scale is equipped with two platforms press  to change the platform.

The active platform is signalled by pictograms in the top left corner of the display.



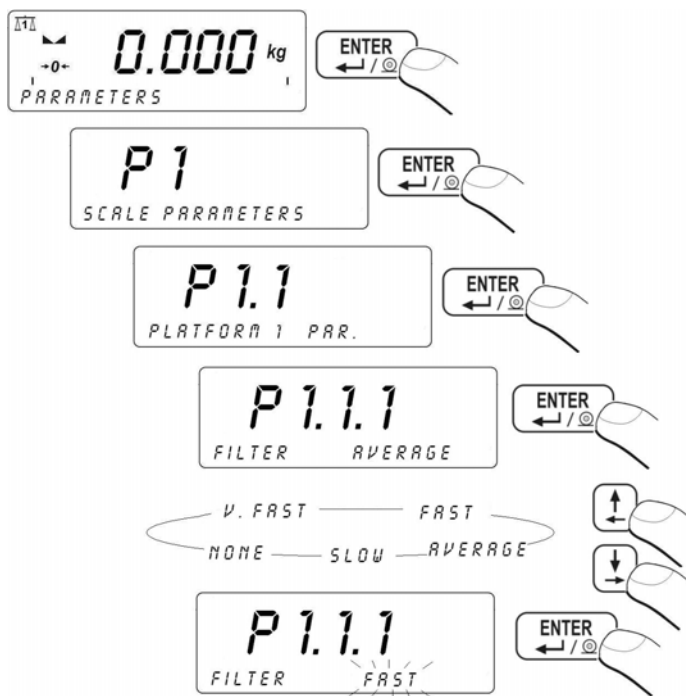
13. MAIN PARAMETERS

Users can adjust the scale to external ambient conditions (filtering level) or particular needs (autozero operation, tare memory). This parameters are present in **<P1 SCALE PARAMETERS>**.

13.1. Filtering level

Procedure:

- While in weighings mode press **F** and then:



Return to weighing:

See 11.3.

NOTICE:

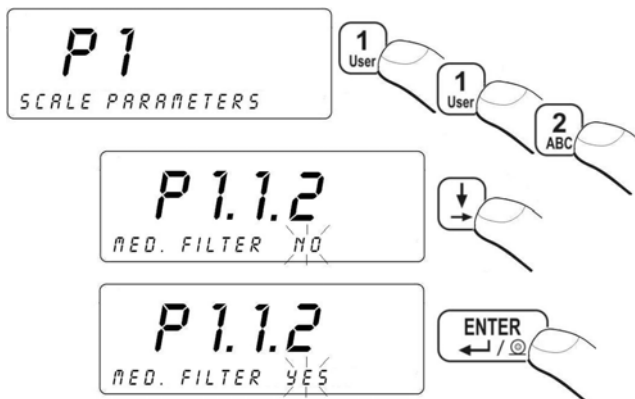
The higher filtering level the longer stabilization time.

13.2. Median filter

This filter eliminates short mechanical shocks

Procedure:

- Enter <P1 SCALE PARAMETERS> and then:



MED. FILTER NO - filter disabled
MED. FILTER YES - filter enabled

Return to weighing:

See 11.3.

13.3. Minimal mass parameter

Parameter **PROG LO** is related to following functions:

- automatic tare,
- automatic operation,
- weighing animals.

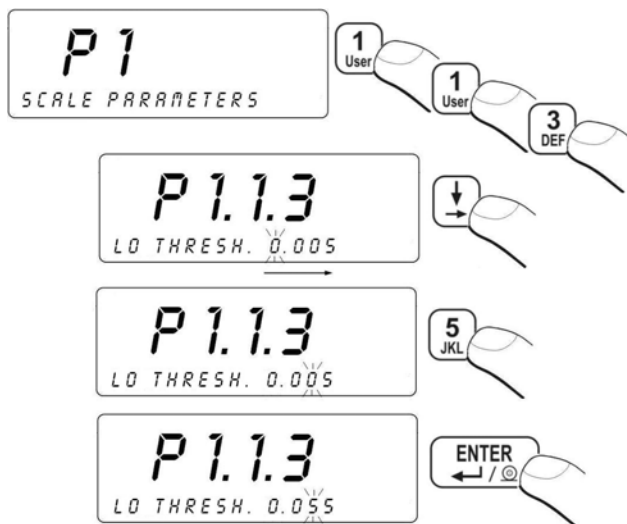
The next automatic tarring can be performed after the indication reaches the gross value below **LO THRESH**.

For automatic weighing the next weighings can be performed after the indication reaches the net value below **LO THRESH**.

The procedure of weighing animals will start after the gross animal mass is greater than **LO THRESH**.

Procedure:

- Enter **<P1 SCALE PARAMETERS>** according to 11.2. and then:



Return to weighing:

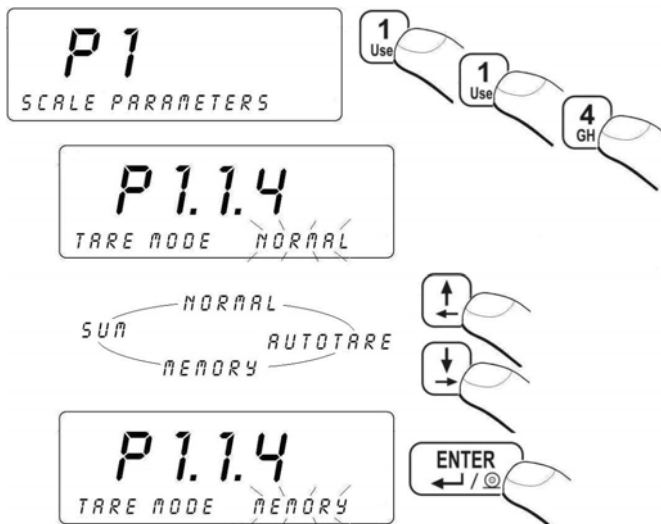
See 11.3.

13.4. Tare function

This parameter allows to set appropriate parameters for tarring.

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:





- | | |
|---------------|---|
| AUTO | – disable automatic tare (the mode is remembered after restart); |
| NORMAL | – tarring by pressing → T ←; |
| MEMORY | – tare memory mode - the last tare value is being kept in a non-volatile memory, Net pictogram is displayed. |
| SUM | – sum of tares – summing up a product tare value with a tare from the database of tare values or with an inscribed one. |

Return to weighing:

See 11.3.

13.5. Autozero

The autozero function has been implemented in order to assure precise indications. This function controls and corrects „0” indication.

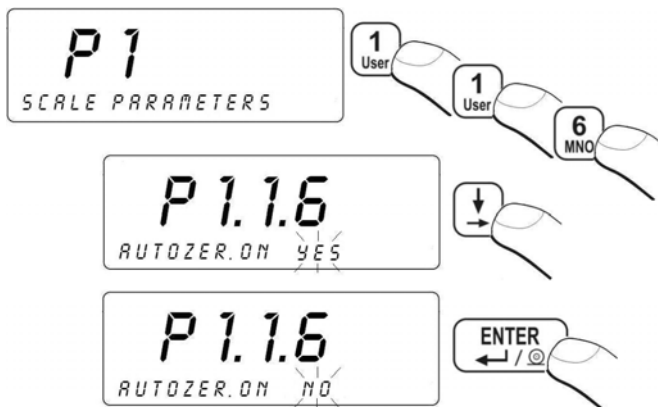
While the function is active it compares the results continuously with constant frequency. If two sequential results differ less than the declared value of autozero range, so the scale will be automatically zeroed and the pictograms  and  will be displayed.

When AUTOZERO is disabled zero is not corrected automatically.

However, in particular cases, this function can disrupt the measurement process e.g. slow pouring of liquid or powder on the weighing pan. In this case, it is advisable to disable the autozero function.

Procedure:

- Enter **<P1 SCALE PARAMETERS>** according to 11.2. and then:



AUTOZER.	NO	- Autozero disabled
AUTOZER.	YES	- Autozero enabled

Return to weighing:

See 11.3.

14. PORTS PARAMETERS

It is possible to connect external devices (printer, computer) to the ports:

- RS 232 (1)
- RS 232 (2)
- RS 485
- Ethernet

Configuration can be done in: **<P2 COM PORTS PARAMETERS>**.

14.1. RS 232, RS 485 setting

For setting: RS 232, RS 485 use following parameters:

- Baud rate - 2400 - 115200 bit / s
- Data bits - 7, 8
- Stop bit - 1, 1.5, 2
- Parity - NONE, ODD, EVEN

Measurements can be sent via RS in following ways:

- **Manually** – after pressing **ENTER**,
- **Automatically** – after stabilizing over Lo,
- **Continuous** – activation in parameters or via RS,
- **External request** – via RS.

Measurements can be sent:

- **When stable** – the information is sent after stabilization
- **Immediately** – after pressing **PRINT** regardless the equilibrium (only in non-verified scales)

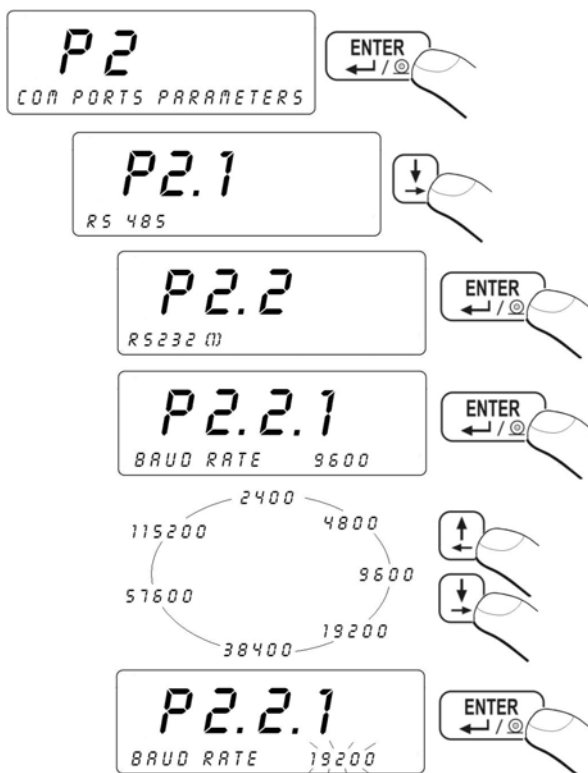
NOTICE:

*There is impossible to set data bits and stop bits for RS 232(2).
They are internally set to 8 bits and 1 stop bit.*

14.1.1. Baud rate of RS 232

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:



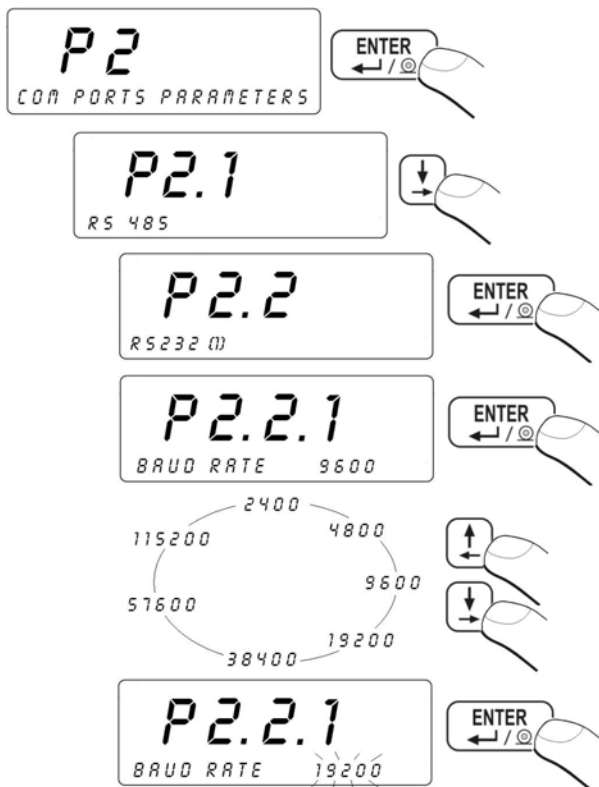
Return to weighing:

See 11.3.

14.1.2. Baud rate of RS 485

Procedure:

- Enter <P1 SCALE PARAMETERS> according to 11.2. and then:




Return to weighing:


See 11.3.

14.1.3. RS 232 parameters


Procedure:

- Enter **<P2.2 RS232 (1)>** and press **<ENTER>**,
- Using  scroll to **<P2.2.2 DATA BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.2.3 PARITY BIT>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.2.4 STOP BITS>** and press **<ENTER>**:




- The selected value confirm with **<ENTER>**,

Return to weighing:

See 11.3.

14.1.4. Setting of RS 485 parameters


Procedure:

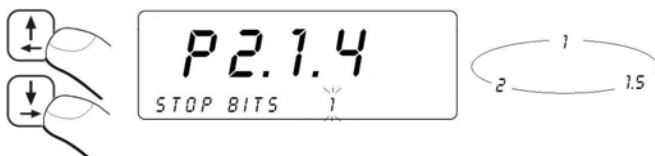
- Enter **<P2.1 RS485>** and press **<ENTER>**,
- Using  go to **<2.1.2 DATA BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.1.3 PARITY BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,
- Using  go to **<P2.1.4 STOP BITS>** and press **<ENTER>**:



- The selected value confirm with **<ENTER>**,

Return to weighing:

See 11.3.

14.2. ETHERNET setting

ETHERNET can be configured in **<P2.4 ETHERNET>**.

Inventory of parameters:

No	NAME	VALUE	DESCRIPTION
P2.4.1	WORK MODE	SERVER, CLIENT	Mode of Ethernet linking as Server or Client
P2.4.2	IP ADDRESS	192.168.0.2	IP address for Ethernet communication
P2.4.3	SUBNET MASK	255.255.255.0	Subnet mask for Ethernet
P2.4.4	GATEWAY	192.168.0.1	Gateway for Ethernet connection
P2.4.5	LOCAL PORT	4001	Local Port for Ethernet
P2.4.6	HOST IP	192.168.0.3	Host IP for Ethernet
P2.4.7	HOST PORT	2000	Host Port for Ethernet
P2.4.8	TIMEOUT	60	Time (in seconds) after which none-active Ethernet connection is being broken

Return to weighing:

See 11.3.

15. DEVICES

In the **<P3 DEVICES>** group of parameter one can configure external devices connected to the terminal.

15.1. Cooperation with a computer

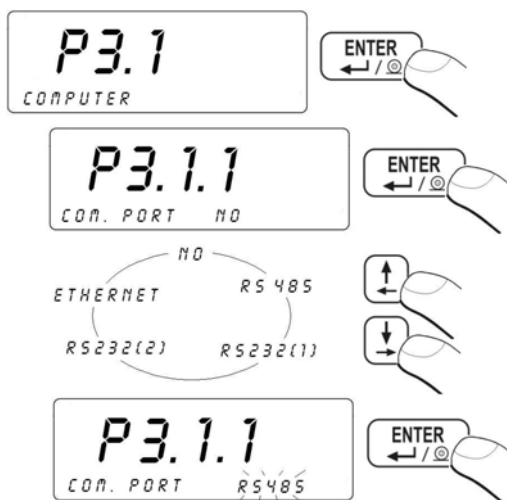
15.1.1. Selecting communication port scale - computer

The computer can be connected to:

- RS 232 (1)
- RS 232 (2)
- RS 485
- Ethernet

Procedure:

Enter **<P3.1 COMPUTER>** and then:



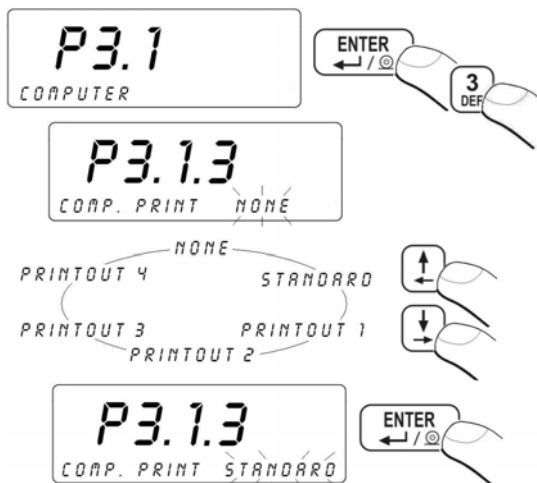
Return to weighing:

See 11.3.

15.1.2. Type of printout scale – computer

Procedure:

- Enter <**P3.1 COMPUTER**> and then:



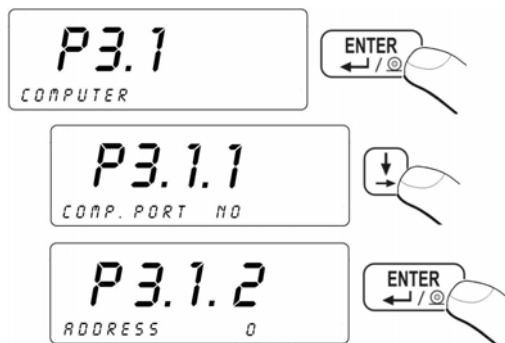
Return to weighing:

See 11.3.

15.1.3. Address setting

Procedure:

- Enter <**P1 SCALE PARAMETERS**> according to 11.2. and then:



- Inscribe a value (0 to 254) and press **<ENTER>**.

Return to weighing:

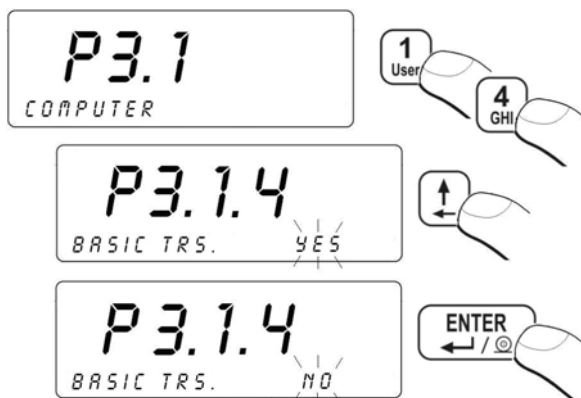
See 11.3.

15.1.4. Order operating of communication protocol

User in parameter **<P3.1.4 BASIC TRS.>** has possibility to set communication protocol designed to communicate between RADWAG scale and external device.

Procedure:

- Enter **< P3.1 COMPUTER >** according to 11.2. and then:



Return to weighing:

See 11.3.

15.2. Cooperation with printers

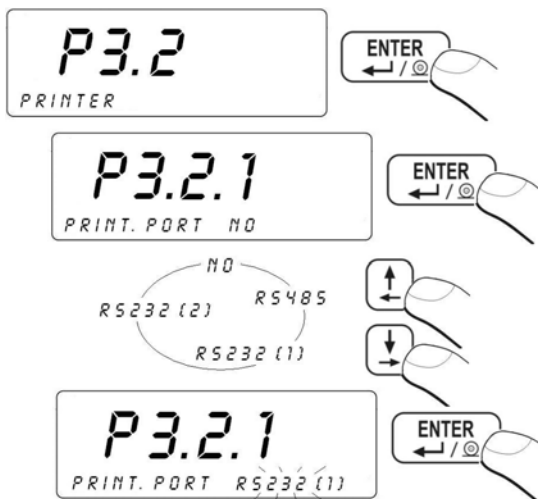
15.2.1. Communication port scale - printer

Following ports can be used:

- RS 232 (1)
- RS 232 (2)
- RS 485

Procedure:

- Enter **<P3.2 PRINTER>** and then:



Return to weighing:

See 11.3.

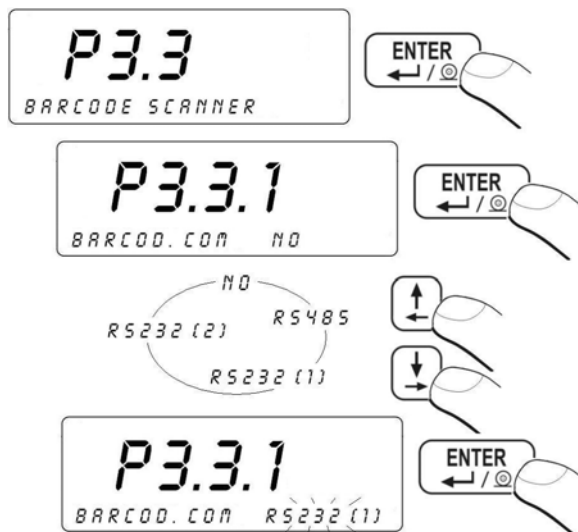
15.3. Cooperation with a barcode scanner

The scale gives possibility to cooperate with barcode scanners. It is used for quick search of database of assortment.

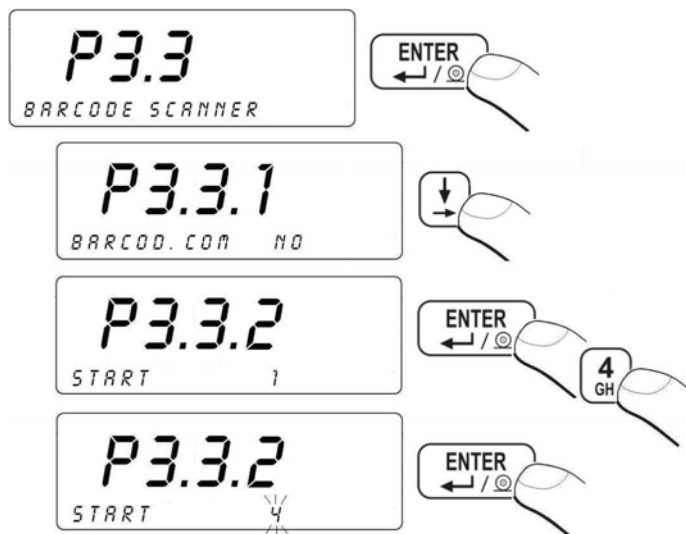
Procedure:

- Enter **<P3.3 BARCODE SCAN.>**,

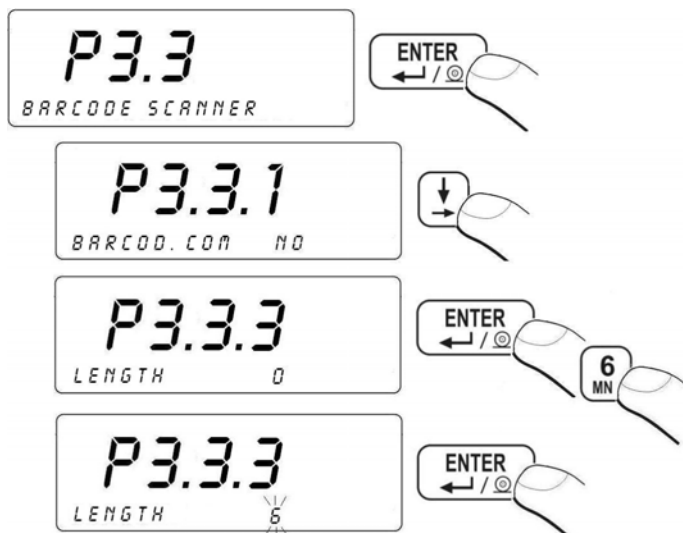
- Select a communication port for the scanner:



- Set **START** parameter- first significant character that is valid for searching string:



- Set parameter **LENGTH** – number of significant characters considered in searching:



Return to weighing:
See 11.3.

NOTICE:

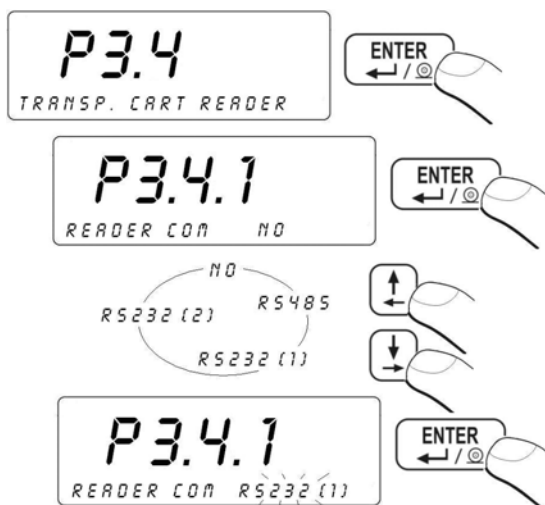
In <P2 COM PORT PARAMETERS> set the baud rate for the one that requires the barcode scanner (default 9600b/s). Additional information can be found in the appendix A.

15.4. Cooperation with a transponder card reader

In case of activating the logging option (submenu <**P6.1 LOG IN**>), operators have to log in after turning on the scale. Logging can be done:

- Inscribing a password using the scale keyboard,
- Using transponder cards to log in.

Select a port number in <**P3.4 TRANSP. CARD READER**>:



Return to weighing
See 11.3.

15.5. Cooperation with additional display

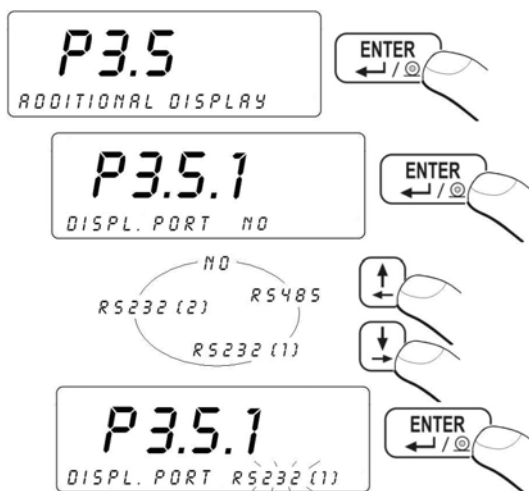
15.5.1. Selecting of communication port scale – additional display

Additional displays can be connected to:

- RS 232 (1)
- RS 232 (2)
- RS 485

Procedure:

- Enter **< P3.5 ADDITIONAL DISPLAY >** according to 11.2. and then:

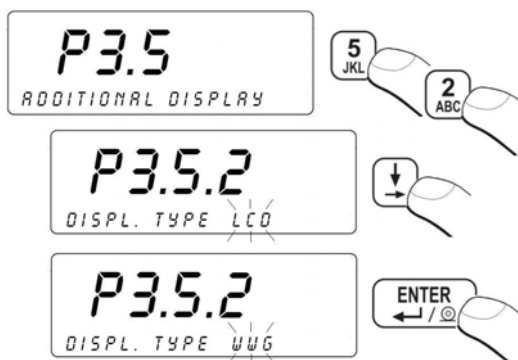


Return to weighing:
See 11.3.

15.5.2. Selecting an additional display type

Procedure:

- Enter < **P3.5 ADDITIONAL DISPLAY** > according to 11.2. and then:



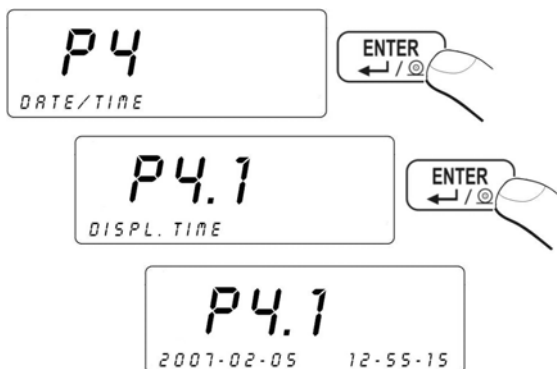
Return to weighing:
See 11.3.

16. DATE / TIME SETTING

Enter **<P4 DATE / TIME>** to set these parameters.

16.1. Time view

Procedure:

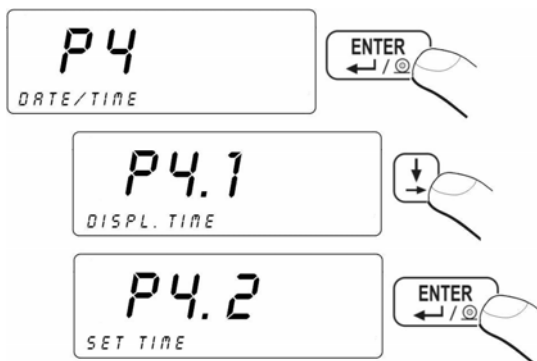


Return to weighing:
See 11.3.

16.2. Time setting

Procedure

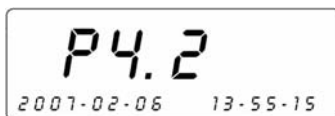
- Enter the **DATE / TIME>** and then:



- After pressing **<ENTER>** you will see:



- Enter an appropriate value and confirm it with **<ENTER>**,
- You will have to enter the following variables in sequence:
 - MONTH
 - DAY
 - HOUR
 - MINUTE
- After confirming the last value with **<ENTER>** you will see the current date and time:



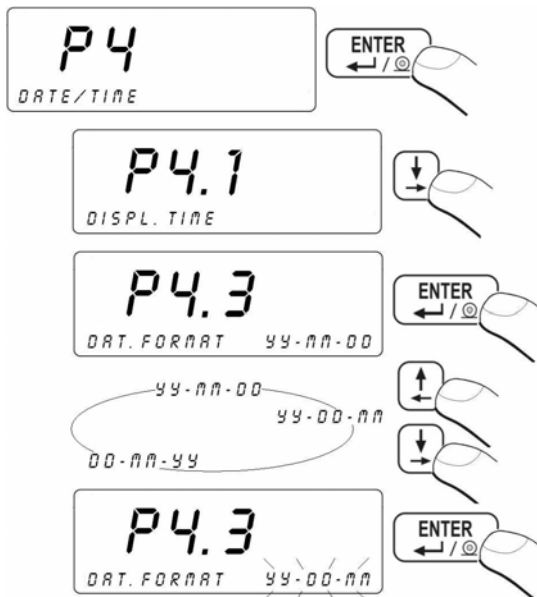
Return to weighing:
See 11.3.

16.3. Date format

Date can be displayed in different format.

Procedure:

- Enter <P4 DATA / TIME> and proceed as follows :



FORMAT DAT	YY - MM - DD	-	year - month - day
FORMAT DAT	YY - DD - MM	-	year - day - month
FORMAT DAT	DD - MM - YY	-	day - month - year

Return to weighing:

See 11.3.

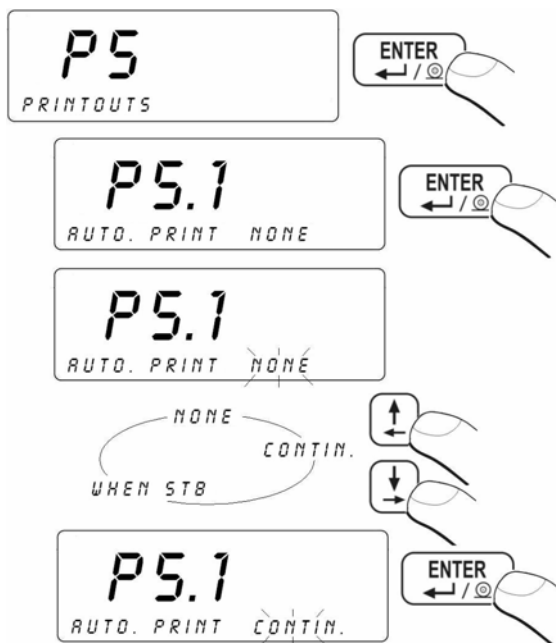
17. PRINTOUTS

17.1. Printout type

Setting the **<P5.1 AUTO. PRINT>** parameter can set a type of printout:

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



AUTO. PRINT
AUTO. PRINT
AUTO. PRINT
AUTO. PRINT

NO
WHEN STAB
CONTINUOUS
LAST STAB

- manual printout
- automatic printout after stabilising
- continuous printouts
- printing the last stable result after taking of a load, before reaching the **LO-** value

Return to weighing:

See 11.3

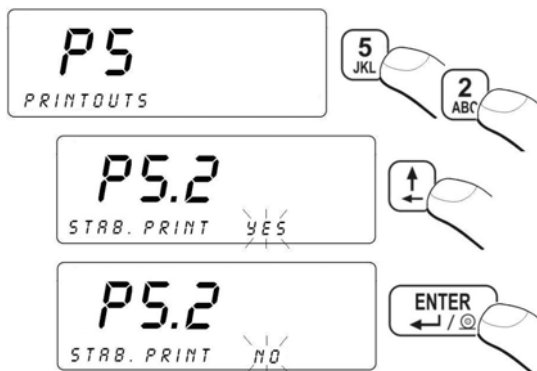
17.2. Printout of stable / unstable data

Enter **<P5.2 STAB. PRINT>**, to set the printout as:

- Stable data,
- Immediate data.

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



Return to weighing:

See 11.3

NOTICE:

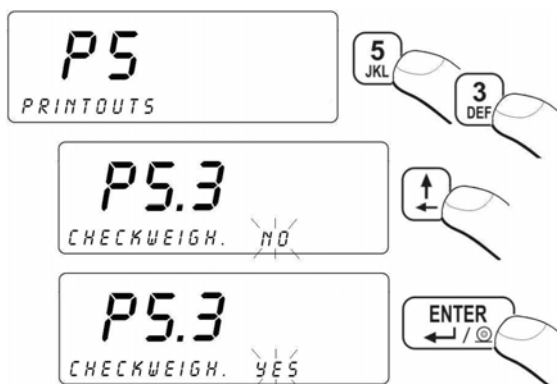
*In case of verified scales **<P5.2 STAB. PRINT>** is not accessible for users.*

17.3. Checkweighing mode

In this mode printout is possible only when the result is between Min, Max thresholds.

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



Return to weighing:

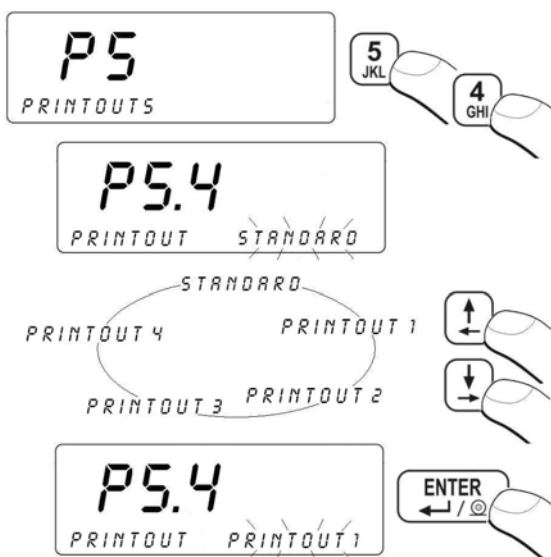
See 11.3.

17.4. Non-standard printouts

Users have possibility to design non-standard printouts in **<P5.3 PRINTOUT>**.

Procedure:

- Enter **<P5 PRINTOUTS>** and then:



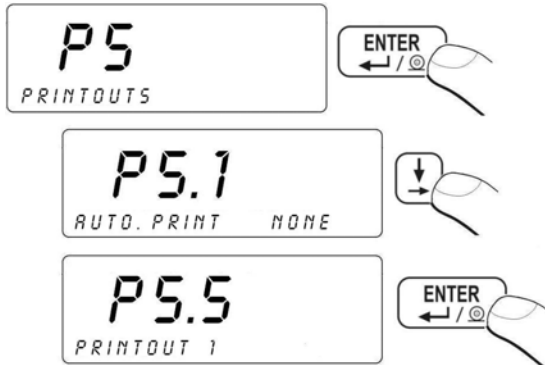
Return to weighing:

See 11.3.

17.5. Designing non-standard printouts

To create a non-standard printout:

- Enter <P5 PRINTOUTS> and then:



- After pressing **ENTER**, you will see a cursor. Software is ready to accept your data.

Non-standard printout can comprise:

- Constant texts,
- Variables from different work modes (mass, date, thresholds etc.),
- Non-standard printout design can include max. 320 characters,
- Non-standard printout sent to a printer can include max. 640 characters,
- Up to 4 non-standard printouts can be designed.

Notice:

During designing non-standard printouts all special characters like CRLF, tabulators etc. have to be added.

17.6. Texts in non-standard printouts

A. Variables appearing in all modes which value does not depend on the mode

CODE	DESCRIPTION
000	Mass in a basic unit of the active platform
001	Mass in a current unit of the active platform
002	Date
003	Time
004	Date and time
005	Calibration unit
006	Current unit
007	Min threshold (for checkweighing)
008	Max threshold (for checkweighing)
009	Min threshold (for checkweighing) 7 digits
010	Max threshold (for checkweighing) 7 digits
011	Net mass in the calibration unit
012	Gross mass in the calibration unit
013	Display result in a present unit
014	Tare in calibration unit
015	Statistics – ordinal number
016	Statistics – sum in the calibration unit
017	Statistics – average value in the calibration unit
018	Statistics – minimal value in the calibration unit
019	Statistics – maximal value in the calibration unit
020	Statistics – unit
021	Single pcs mass
022	Standard (nominal) mass in Checkweighing
023	Platform number
024	Operator name
025	Operator code
038	Product name
039	Code of product
040	EAN code of product
042	Minimal number of pieces of a product
043	Maximal number of pieces of a product
044	Product's tare

056	Net mass (lb)
058	Number of digits after the point (calibration unit)
059	Number of digits after the point (current unit)
060	Number of pieces in EAN 13 (6-characters' code)
061	Number of pieces in EAN 13 (expanded 7-characters' code for supermarkets)
064	Net mass in EAN 128
067	Net mass (lb) in EAN 128
068	Gross mass EAN 128
070	Date in EAN 128
127	Difference of tare values (a product tare value subtracted from present tare value)
128	Batch number (6 characters)

B. Variables for counting pieces only

015	N1 counter of basic labels
016	SUM1 number of pieces for c label
026	N2 counter of cumulative labels
027	Total mass SUM2 for cc label
030	Contractor's name
031	Contractor's code
032	Contractor's street
033	Contractor's post code
034	Contractor's town/city
035	Contractor's country
036	Contractors Tax Identification Number
037	Contractors discount
041	Nominal mass for product
045	Product's unit price
046	Number of days for expiration date
047	VAT
048	Product date
052	Net value (pcs * price)
053	Net value for c labels
054	Net values for cc labels
055	Gross value (net + VAT)
057	Expiration date (current date + number of days 046)

062	Net value in EAN 13 (6-character code)
063	Net value in EAN 13 (expanded 7-characters' code for supermarkets)
069	Product price in EAN 128
071	Product date in EAN 128
072	Expiration date in EAN 128
100	Cumulative number of pieces in EAN 13 (6-digit code)
101	Cumulative number of pieces in EAN 13 (7- digit code)
102	Net cumulative value in EAN 13 (6-digit code)
103	Net cumulative value in EAN13 (7-digit code)
104	Number of pieces in EAN 13 (6- digit code) for cc label
105	Number of pieces in EAN 13 (7- digit code) for cc label
106	Net cc value in EAN 13 (6-digit code)
107	Net cc value in EAN13 (7-digit code)
126	Reference number of pieces

Code format:

- %XXX** - sending to a printer a variable **XXX** value
(see the upper table)
- *XXXYY** - sending to a printer **YY** (declared) characters
of **XXX** variable value justified to the left.

Notice:

*Every non-standard printout should be terminated with **␣** character.*

C. Variables for printing out weighings from the database

073	Weighing net mass
075	Weight unit
076	Weighing date
077	Weighing time
078	Operator code
079	Assortment code
080	Contractor code
083	Number of series
084	Platform number

This program includes a standard pattern of printouts from the database (pattern name: *WG01*), with following variables:

- Net mass of weighing,
- Date,
- Time.

Notice:

*Remember that the name of a new printout design should have the following pattern: *WGXX*, where: XX – subsequent number of printout.*

D. Variables for printouts of reports from weighings

087	Sum of weighings
088	Weight unit
089	Number of weighings
090	Start date
091	End date
092	Operator code
093	Assortment code
094	Contractor code
097	Series number
098	Type of weighings (%, pcs, kg etc.)
099	Platform number

The program includes 4 patterns of reports from weighings. *RP02* is the English equivalent of *RP01* and *RP04* is an English equivalent of *RP03*:

Name	Comprised variables
RP01	Sum of weighings Number of weighings Start date End date
RP03	Operator code Assortment code Contractor code Sum of weighings Number of weighings Start date End date

Notice:

1. Remember that the name of a new printout design should have the following pattern: ***RPXX***, where: **XX** – subsequent number of printout.

E. Special characters that can be used in non-standard printouts

\\	Single character - „\”
\c	CRLF
\r	CR
\n	LF
\t	Tabulator
\0	End of printout

Each of the four printouts can hold up to 320 characters (letters, digits, special characters, spaces).

Notice:

Every non-standard printout should be terminated with **\0** character.

Example:

ZMP „RADWAG”

Date:

Time:

Mass:

Signature:.....

The inscribed data for :

ZMP “RADWAG”\C\TDATA:%002\C\TGODZINA:%003\C\TMASS:%000\C\
C\T\TSignature:\C\0

18. STATISTICS

18.1. Updating of statistics

All statistics are updated in real time after every subsequent measurement after putting a load on the pan, reaching equilibrium, and pressing **ENTER**.

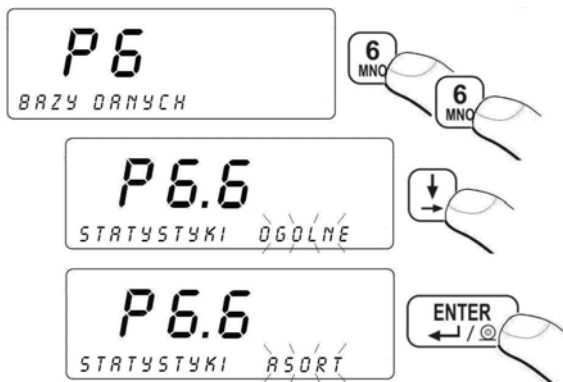
Number of weighings and sum are shown in the lower line of the display.



Statistics can be calculated globally (does not depend on the selected product) or separately for every product from the assortment database. It can be set in parameters **<P6.6 STATISTICS>**.

Procedure:

- Enter **< P6 DATABASES >** according to 11.2. and then:



STATISTICS GENERAL - global statistics.
STATISTICS ASSORT - statistics for every product.

Return to weighing:



See 11.3.

18.2. Printouts of statistics

Users can print out statistics in any work mode.

Procedure:



Using   users can view the current statistics: **SUM** – total mass of all details, **AVG** – every mass of all details, **MIN** – minimal mass, **MAX** – maximal mass.

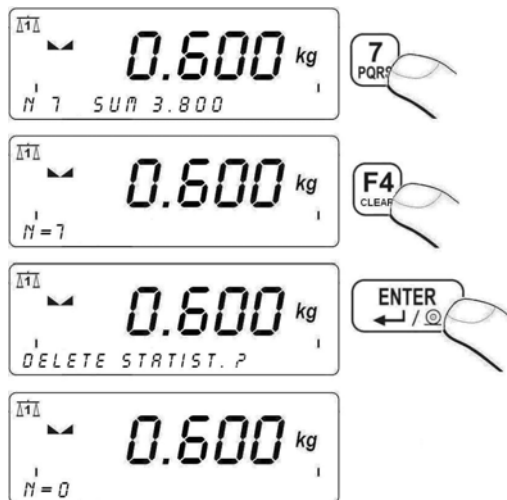
Printout example:

N = 7	- number of weighing
SUM = 3.800 kg	- total mass
AVG = 0.543 kg	- average mass of all loads
MIN = 0.200 kg	- minimal mass
MAX = 1.000 kg	- maximal mass

18.3. Zeroing statistics

Users can delete statistics to start a new series of measurements.

Procedure:



Return to weighing:

See 11.3.

Notice:

When a user changes a work mode all statistics are automatically deleted.

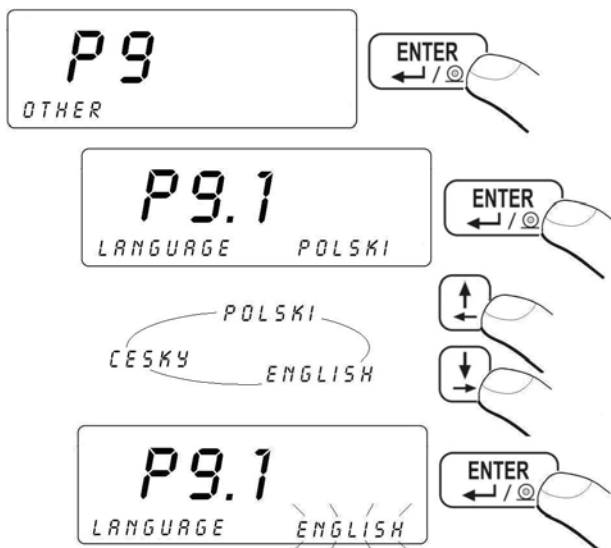
19. OTHER PARAMETERS

Users can set parameters that influence the weighings procedure. There are included in **<P9 OTHER>** e.g. language, backlight, BEEP sound.

19.1. Language setting

Procedure:

- Enter **<P9 OTHER>** and then:



Return to weighing:

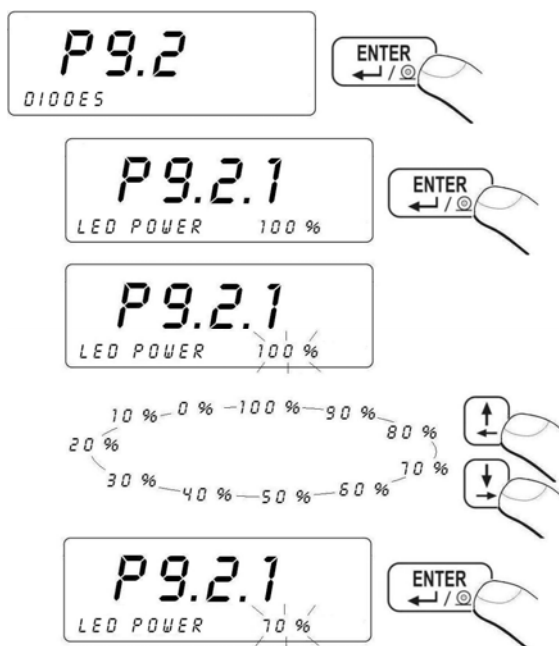
See 11.3.

19.2. DIODES power setting

According to the requirements (e.g. intensity of external light) it is possible to change the light flux from LEDs in the scale of 0% to 100%.

Procedure:

- Enter **<P9.2 DIODES>** and then:



Return to weighing:

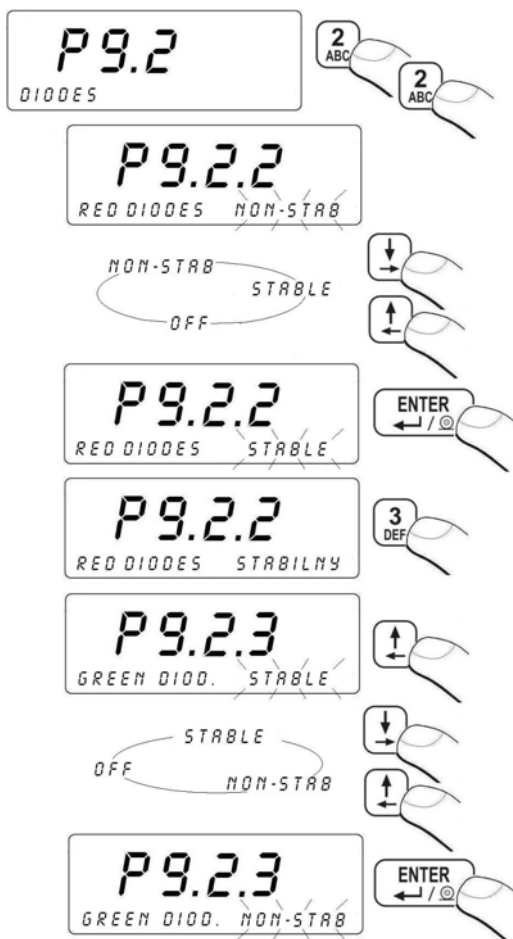
See 11.3.

19.3. Work mode of DIODES

In **<P9.2 DIODES>** users can chose a work mode for LEDs.

Procedure:

- Enter **<P9.2 DIODES>** and then:



RED LEDS NONSTAB.

- diodes start to lit after exceeding the LO threshold (see 13.3),

RED LEDS STABLE

- diodes start to lit after exceeding the LO and reaching equilibrium,

RED LEDS OFF

- diodes not work,

GREEN LEDS NONSTAB.

- diodes start to lit after exceeding the LO,

GREEN LEDS STABLE

- diodes start to lit after exceeding the LO and reaching equilibrium,

GREEN LEDS OFF

- diodes not work.

Return to weighing:

See 11.3.

19.4. Automatic power down

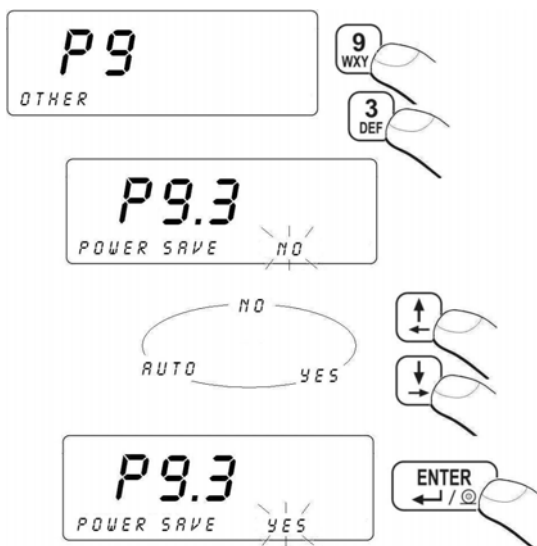
Changes can be made in **<P9.3 POWER SAVE>**. When the **POWER SAVE** function is enabled the device switches off after 5 min. Provided no changes on the pan appeared (no changes on the display).

Function setting	Operation	
	Mains	Accumulator
POWER SAVE = NO	Disabled	Disabled
POWER SAVE = YES	Enabled	Enabled
POWER SAVE = AUTO *	Disabled	Enabled

* power save mode for the internal power supply.

Procedure:

- Enter **<P9 OTHER>** and then:



Return to weighing:

See 11.3.

19.5. Backlight

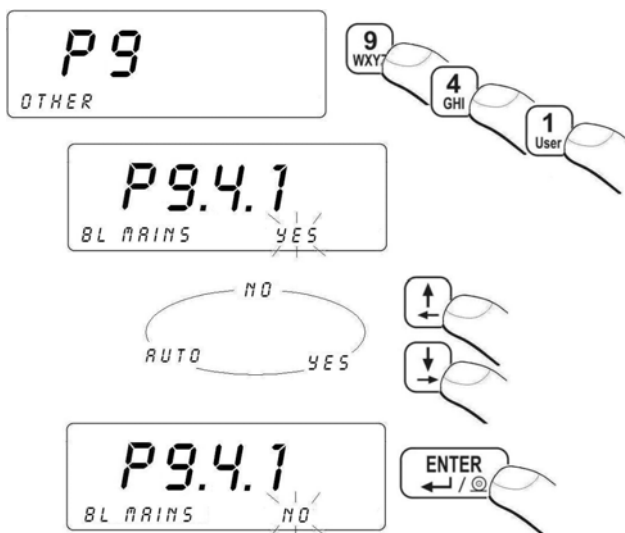
According to the requirements (e.g. intensity of external light) it is possible to:

- Switch on/off or set the backlight operation to AUTO – when supplied from mains,
- Change the backlight intensity in the scale of 0% to 100% - when supplied from an accumulator (lower backlight intensity increases the operation time when supplied from the accumulator).

19.5.1. Backlight – power supply from mains

Procedure:

- Enter **<P9 OTHER>** and then:



- BL MAINS NO** – backlight switched off
BL MAINS YES – backlight switched on
BL MAINS AUTO – backlight switched off automatically

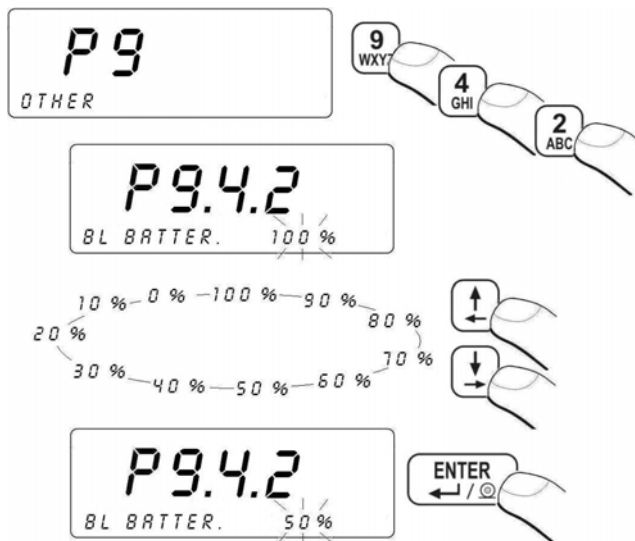
Return to weighing:

See 11.3.

19.5.2. Backlight - power supply from the accumulator

Procedure:

- Enter <P9 OTHER> and then:



Return to weighing:

See 11.3.

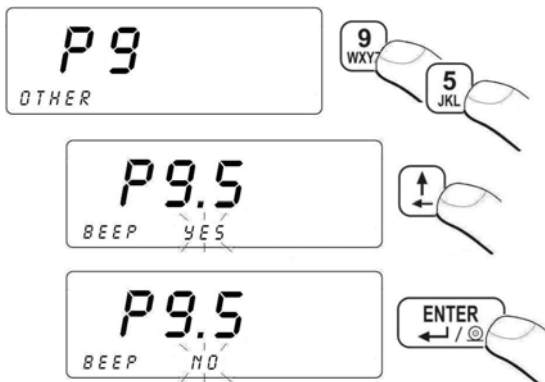
NOTICE:

Backlight operation shortens time between subsequent recharges of the accumulator.

19.6. “Beep” sound – key-press reaction

Procedure:

- Enter the **<P9 OTHER>** and the:



BEEP NO - no “beep” after pressing keys
BEEP YES - “beep” after pressing keys

Return to weighing:

See 11.3.

19.7. Software version view

Users **<P9.6 SOFT. VER.>** can view a software version number.

Procedure:

- Enter **<P9 OTHER>** and then:



Return to weighing:

See 11.3.

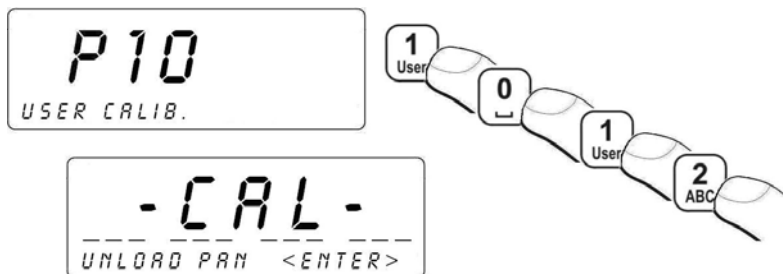
20. SCALE CALIBRATION


Option only for non-verified scale

Scales require to recalculate internal divisions to more suitable ones (e.g. g, kg etc.). In order to do this they require a calibration factor. It is adjusted during the calibration procedure using a mass standard. Calibration should be made when weighing a standard mass shows a different mass value.


20.1. Calibration procedure

- Enter **<P10 USER CALIB.>** and then:



- Unload the pan,
- Press . During adjusting a start mass you will see: **ADJ. START MASS**, in the bottom line.
- After completing this procedure you will see the following window:



- Place the required mass on the platform 1 then press ,
- During the calibration process you will see: **ADJ. CALIB. FACTOR**, in the bottom line.,
- After the procedure is completed you will see in: **UNLOAD THE PAN** in the bottom line,
- After taking off the calibration weight :



- Return to weighing, saving parameters.

Return to weighing:

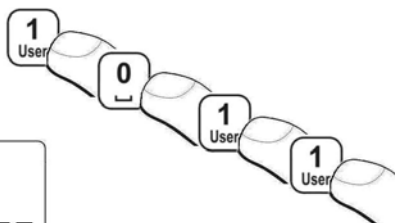
See 11.3


20.2. Start mass adjustment

It is possible to adjust only a start mass, it helps to correct the start zero when the span does not change.

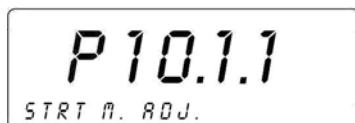
Procedure:

- Enter <P10 KALIBRACJA UZYTK.> and then:



- Unload the scale,
- Press . During adjusting a start mass you will see: **ADJ. START MASS**, in the bottom line.

After completing this procedure the scale will return to the following window:



- Return to weighing, saving parameters.

Return to weighing:

See 11.3.

21. DATABASES

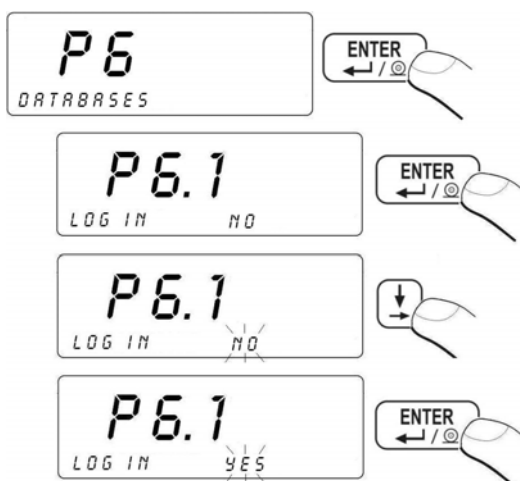
21.1. Logging procedure

In case of activating of logging procedure (submenu **<P6.1 LOG ING>**), an operator after switching on has to perform a jogging procedure which consists in inscribing a password.

Operators can also use a transponder cards for this procedure provided the terminal is equipped in a transponder card reader (see 15.4).

Procedure:



- Enter **<P6 DATABASES >** and then:

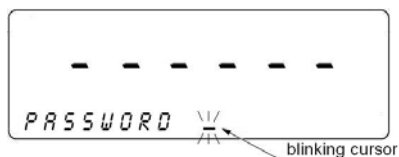


Return to weighing:

See 11.3.

Users can log in even if this procedure is disabled at the start:

- Turn on the device ,
- Press  during a display test,
- Program will show the following window:



Notice:

In case there are no data in the operators' database press **ESC** to skip the logging procedure and add at least one operator with the highest level access. If no ADMINISTRATORS are defined there will be no access to some functions designated only for administrators.

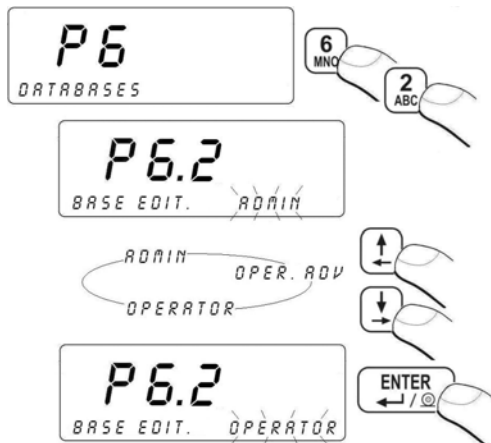
21.2. Access level

21.2.1. Access level to edition of databases

Any administrator is able to set one of three levels of edition of databases: administrator, advanced operator or operator.

Procedure:

- Enter **<P6 DATABASES>** and then:



Return to weighing:

See 11.3

Notice:

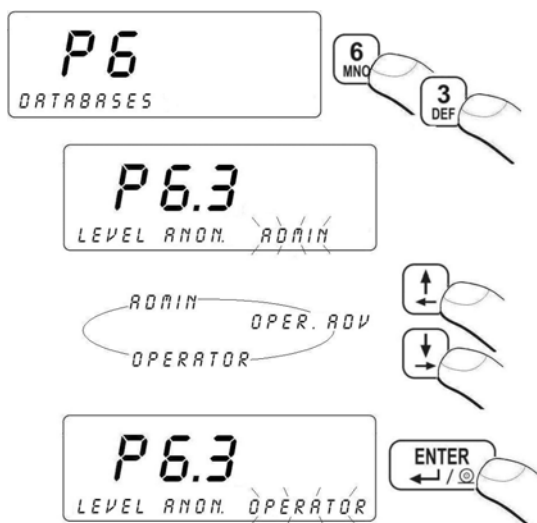
This setting is valid although standard logging is disabled.

21.2.2. Access level for disabled logging procedure

The scale program gives possibility to set an access level in case of disabling logging procedure.

Procedure:

- Enter **<P6 DATABASES>** and then:



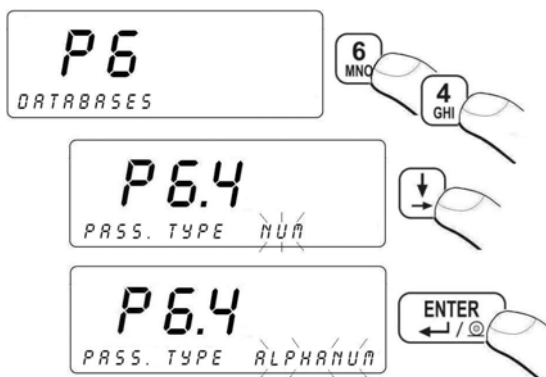
Return to weighing:
See 11.3.

21.3. Password type

It is possible to set the password type to inscribe.

Procedure:

Enter **<P6 DATABASE>** and then:



- PASS. TYPE NUM** - only digits **0** to **9**
PASS. TYPE ALPHANUM - alphanumeric password

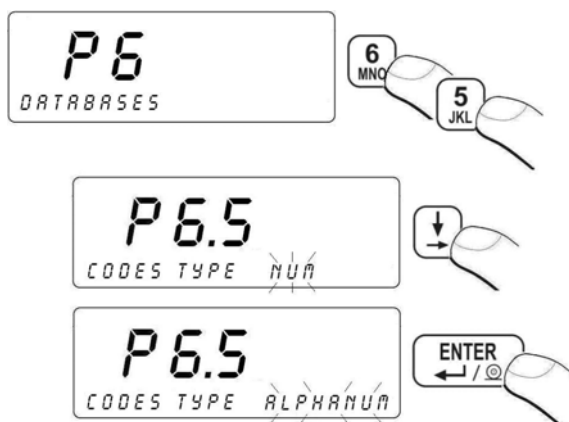
Return to weighing:
 See 11.3.

21.4. Type of codes

There is possible to select a type of codes. You can set this in database settings.

Procedure:

- Enter **<P6 DATABASES>** and then:



CODES TYPE NUM

- only digits **0** to **9**,

CODES TYPE ALPHANUM

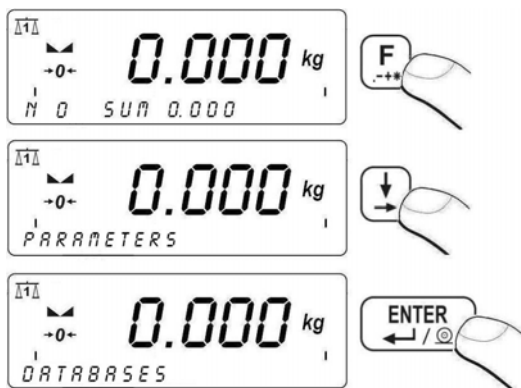
- alphanumeric

Return to weighing:

See 11.3.

21.5. Access to edition of databases

Procedure:



Return to weighing:

See 11.3.

Notice:

Users can access different things in the menu according to their Access levels. It also concerns an access to databases.

21.6. Quick search of records in databases

Users can search databases using different criteria:

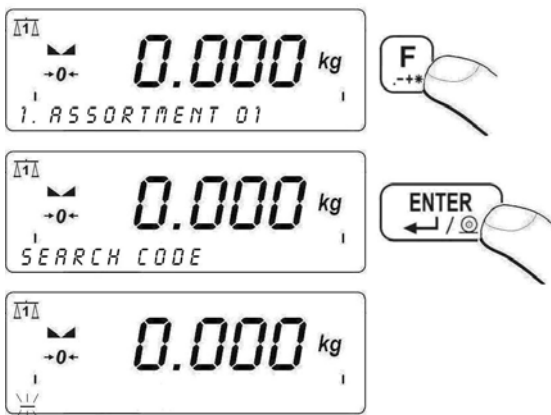
- Code,
- Name,
- Record number.


This procedure can be used only with: operators, assortment, and contractors.

21.6.1. Quick code search

Procedure:

While in any work mode press  (select / view products in the assortment database) and then:



- Inscribe the code you search and then press .
- The program displays the record you search in the bottom line.

Notice:

If the search result is not successful the <NO RECORD> message in the bottom line is displayed for 1 second and then software returns to displaying the current record.

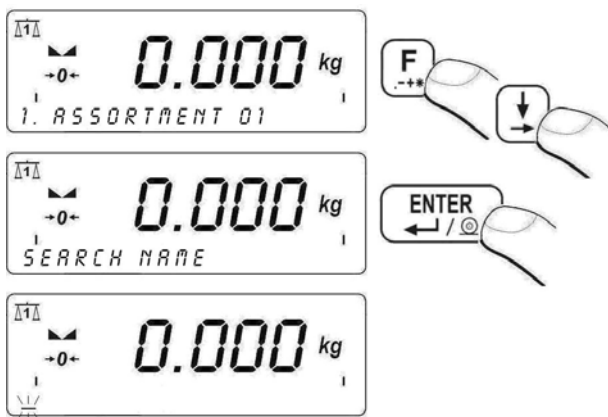
Return to weighing:


See 11.3.

21.6.2. Quick name search

Procedure:

While in any work mode press  (select / view products in the assortment database) and then:



- Inscribe the name you search and then press .
- The program displays the record you search in the bottom line.

Notice:


*You can inscribe a part of the name to start searching. The program will display the first string it encounters with the same beginning as the inscribed one. If the search result is not successful the **<NO RECORD>** message in the bottom line is displayed for 1 second and then software returns to displaying the current record.*

Return to weighing:

See 11.3.

21.6.3. Quick number search

Procedure:

- While in any work mode press  (select / view products in the assortment database),
- Scale program displays the record number one in the bottom line:



- Using numeric keys  to  enter a required record number,
- Scale program displays the record in the bottom line:

Return to weighing:

See 11.3.

21.7. Users' database

The database of operators can hold up to 100 records in standard setting of databases.


Defining of operators:

- Enter databases according to 21.5 and then:



- When the database is empty you will see:





- To add a record press ,
- In the lower line you will see the first line for inscribing data.

Fields in an operator record:


NAME	Operator name (40 characters)
CODE	Operator code (6 digits or 6 characters, according to <P6.5 CODES TYPE>, see 21.4)
PASSWORD	Password for logging (8 digits 8 characters, according to <P6.4 PASS. TYPE>, see 21.3)
CARD CODE	Transponder card code (15 digits, see 15.4)
AUTHORIS.	The access level (see 21.2)

You can enter the edition end confirm any data by pressing .




You can select fields using  .

- After defining all fields in a record of operator press ,
- Then you will see:



- Press  if you want to save,
- You will see a name and a position in the database:



- To delete a record press ,
- To edit a defined record press ,
- To delete all records press .

Return to weighing:

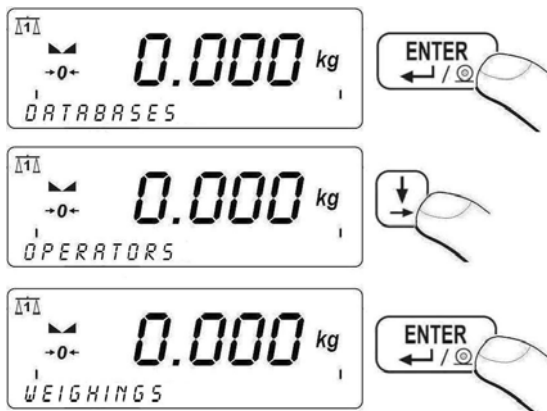
See 11.3.

21.8. Weighings database

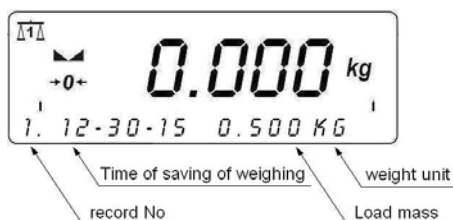
Every result sent from the scale to a printer is also saved in the database of weighings. There is possible to save up to 40 000 records in database in standard setting.

Procedure of editing of weighings:

- Enter the database according to 21.5 and then:



- In case when the database is not empty, you will see the first record (date, mass, unit):



- To delete the selected record press **F2** DEL,
- To delete all records press **F4** CLEAR.

Return to weighing:

See 11.3.

21.9. Assortment database

The assortment database can comprise up to 3000 records.

Procedure of adding records:

- Enter databases according to 21.5 of this manual:



- In case the database is empty you will see:





- Press **F1** to add a record,


You will see the first empty record in editing mode.

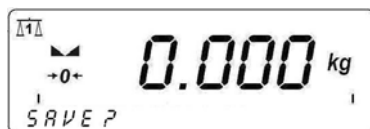
Fields in the assortment database:


NAME	Product name (max. 40 characters)
CODE	Product code (7 digits 7 characters <P6.5 CODE TYPE>, see 22.4)
EAN	Constant code that can be used as a barcode (max. 15 digits)
PCS MASS	Mass of single piece
MIN	Minimal number of pieces
MAX	Maximum number of pieces
TARE	Tare value (it is preset automatically after selecting a product)
PRICE	Unit price
VAT	Value added tax in per cents (0 to 100)
VALIDITY	Number of days for expiration date
DATA+A	Constant date characterising a product
LABEL CODE	Label code from the database of labels (relation-label)
C. LABEL CODE	Label code from the database of labels (relation-c label)
CC LABEL CODE	Label code from the database of labels (relation-cc label)

Use  key to enter a parameter and confirm a parameter value.

Select an appropriate field using  .

- After defining all the fields press ,
- In the lower line you can see:



- Press  to save changes,
- In the lower line of the display you will see the name of the inscribed record and the subsequent position number in the database:



- To delete a selected record in the database press **F2** DEL,
- To edit a defined record press **F3** EDIT,
- To delete all the records press **F4** CLEAR.

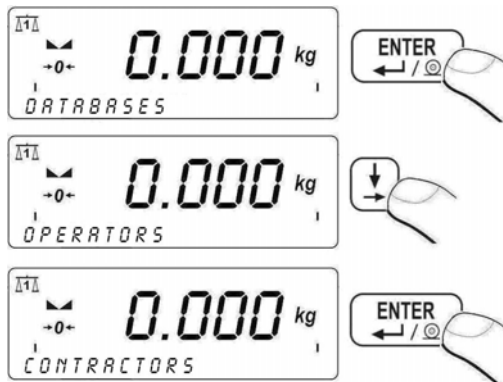
Return to weighing:
See 11.3.

21.10. Database of contractors

Database of contractors consist of 500 records.

Procedure of adding records:

- Enter databases according to 21.5 of this manual:



- In case the database is empty you will see:




- Press **F1** INSERT to add a record,
- You will see the first empty record in editing mode.


Fields in database of records:

NAME	Contractor name (max. 40 characters)
CODE	Contractor's code (6 digits or characters see <P6.5 CODE TYPE >, see 21.4)
STREET	Street name (28 characters)
POST CODE	Post code (8 digits)
CITY	City/town of contractor (28 characters)
COUNTRY	Country of contractor (28 characters)
TIN	Tax identification number(10 digits)
DISOUNT	discount (in %) – value 0 to 99.99
LABEL CODE	A code of prescribed label




Entering edition and confirming changes can be made by pressing .
Select fields to be changed using   keys.

- After defining all fields press .
- You will see the following inscription:



- Press  to save changes,
- You will see the product name you have edited:



- To erase the selected record press .
- To edit the selected record press .
- To clear the database press .


Return to weighing:

See 11.3.









21.11. Database of tare values

It is possible to keep up to 100 tare values for each platform.

Procedure:

- While in any work mode press  twice, you will see:



- To enter or edit records press ,
- To clear editing field press ,
- Enter the expected value and confirm it with ,
- Press  one more time to weighings. You will see the entered tare value preceded by „-“ (provided the scale pan was empty).
- You can browse the database of tares using   or inscribing directly a record number using  to .

Notice:


If the inscribed tare value is too high following error message will be displayed: <VALUE TOO HIGH>.

Return to weighing:

See 11.3.

21.12. General purpose variables

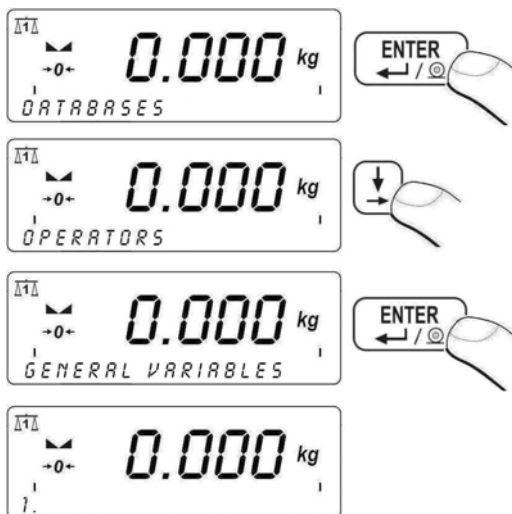
You can inscribe any text to be memorized for printouts.

You can view or edit them from the level of databases in the menu or using a quick access method by pressing  from any work mode (apart from dosing).

21.12.1. Editing general purpose variables

Procedure:

- Enter databases according to 21.5 and then:



- To add or modify a record (inscribing characters like in mobile phones) press **F3**,
- To add or modify a record (inscribing only digits **0** to **9**) press **F4** CLEAR,
- To clear a field press **F4** CLEAR when you are in,
- Using appropriate keys inscribe a variable and confirm it by pressing **ENTER** (left arrow and circle icon),
- You can browse the variables using **↓** **↑** or by inscribing a variable position number **0** to **9** WXYZ to get a quick access.

Return to weighing:

See 11.3.

21.12.2. General purpose variables in printouts

The database of general purpose variables can comprise up to 100 records. Each record can hold up to 320 characters. Each variable has prescribed a code number formatted as **% XXX** or *** XXX YY**:

% XXX - inserting to the printer buffer a dedicated variable, where:

XXX – is between 801 to 900, which is equivalent to subsequent records in the database (e.g. code 802 is equivalent to the 2nd position in the database).

*** XXX YY** - inserting to the printer buffer a dedicated variable, where **YY** is a declared quantity of characters from a variable **XXX**.

Example:

Zakład Mechaniki Precyzyjnej „RADWAG”

Date:

Time:

Mass:

signature:.....

Where: <Zakład Mechaniki Precyzyjnej „RADWAG”> is a universal variable No 3.

After entering non-standard printouts (see 17.5) we design a printout:

```
% 8 0 3 \ C \ T D A T E : % 0 0 2 \ C \ T T I M E : % 0 0 3 \ C \ T M A S S :  
% 0 0 0 \ C \ C \ T \ T S I G N A T U R E : . . . . . \ C \ 0
```

22. REPORTS FROM WEIGHINGS

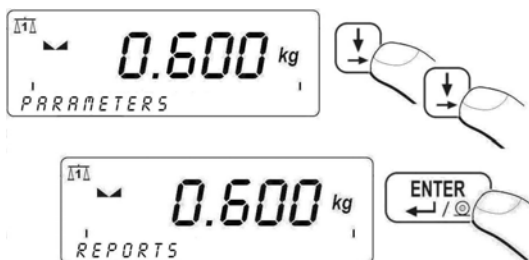
Users can print reports from the series of weighings.

Reports can be filtered according to:

- start date,
- end date,
- operator code,
- assortment code,
- contractor's code,
- type of weighing,
- weighing platform number,
- batch number.

22.1. Editing of reports

While in any work mode press **F** and then:






Return to weighing:

See 11.3.




22.2. Printout of reports

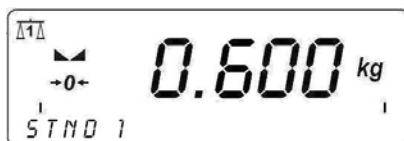
After entering editing (see ch. 22.1) you will see the following window:






- To edit variables press ,
 - Confirm the changes by pressing ,
 - To switch on filtering according to a selected variables press ,
- you will see the following window:



- Press  to select a variable,
- After editing all the variables press  to go to **<PRINT REPORTS>**
- Press , you will see the following screen:



- Using   select one of four report patterns (report patterns description – see ch. 17.6),
- Press  to printout a report according to the selected pattern.

Return to weighing:

See 11.3.

Notice:

If filtering according to all variables is disabled, the report from all the weighings will be printed out.

23. CONFIGURATION OF EXTERNAL INPUTS / OUTPUTS

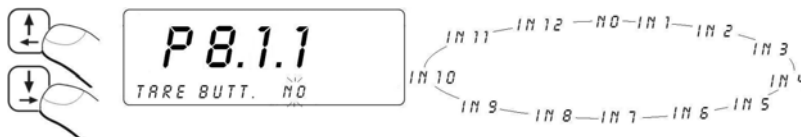
23.1. Configuration of external buttons/signals


Following external buttons/signals can be connected:

TARE BUTT	Tare button
PRINT BUTT	Print button
ZERO BUTT	Zero button
START BUTT	Start button, Start weighing animals button
STOP BUTT	Button for breaking dosing process, Button for breaking weighing animals
EXT. START	Input signal allowing to START dosing
TERM. BUTT.	Terminating of dosing process
CHUTE PERM.	Permission input signal for chute

Procedure:

- To declare a number of input ascribed to the button enter **<P8.1 EXTERNAL BUTTONS>** and then,
- Press **ENTER**,
- You will see **<P8.1.1 TARE B.>**,
- Press **ENTER**:



- Confirm your selection with **<ENTER>**,
- Using  go to the next parameter.

Notice:

You can ascribe all your buttons accordingly. Remember that the standard solution has only 3 inputs.

Return to weighing:

See 11.3.

23.2. Configuration of outputs

Users can configure outputs according to their needs.

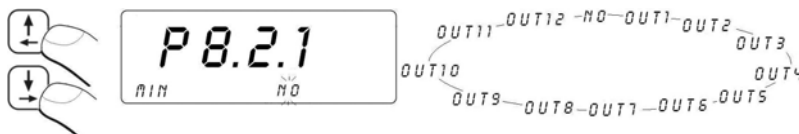
You can declare outputs:


MIN	Mass below the Min threshold
OK	Mass between Min and Max threshold
MAX	Mass over the Max threshold
STABLE	Stable result over the LO threshold
THRE 1	Threshold of passing from dosing to precise dosing in dosing mode
THRE 2	Completing dosing process
CHUTE	Chute control

Procedure:

To declare an output number connected with the function, enter **<P8.2 OUTPUT CONF.>** and then:

- Press **ENTER**,
- You will see **<P8.2.1 MIN>**,
- press **ENTER**:



- Confirm the selected value with **<ENTER>**,
- Using  go to the next function.

Notice:


You can ascribe all functions to outputs accordingly. Remember that the standard solution has only 3 reed relay outputs.

Return to weighing:

See 11.3.

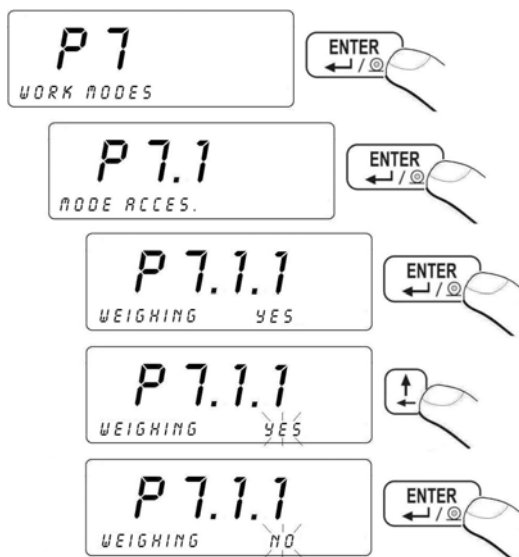
24. WORK MODES

24.1. Setting accessibility of work modes

In the parameter **<P7.1 ACCESSIBILITY>** users can declare which work modes need to be accessible after pressing .

Procedure:

- Enter **<P7 WORK MODES>** and then:



NO - mode denied
YES - mode accessible

Return to weighing:
See 11.3.

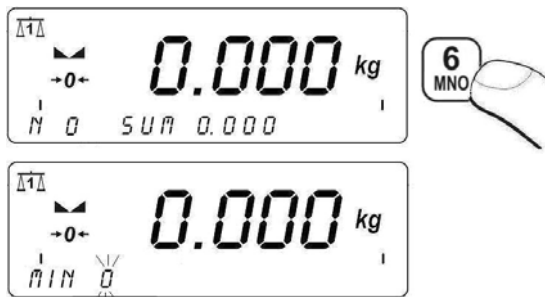
Notice:




This way you can disable/enable all accessible work modes.

24.2. +/- control according to an inscribed standard mass




While in weighing mode users can define (**MIN**, **MAX**).

Procedure:



- Using  to  numerical keys inscribe a **MIN** threshold and confirm with ,
- You will see the following display:



- Using  to  numerical keys inscribe a **MAX** threshold and confirm with ,
- Software returns to **WEIGHING**.

While setting these thresholds following features are important:

- Symbols: **Min**, **OK**, **Max** in the upper line of the display:

load mass greater than the II-nd threshold

load mass between thresholds

load mass lower than the I-st threshold



- Designation of the proper interval (OK) on the bargraph:



interval between lower and upper threshold

- Three **fields of signalling LEDs** over the display:

Left – red – when this field shines the mass is lower than the **Min** threshold;

Middle – green – Designation of the proper interval **OK** between **MIN** and **MAX** thresholds;

Right – red – when this field shines the mass is higher than the **Max** threshold.

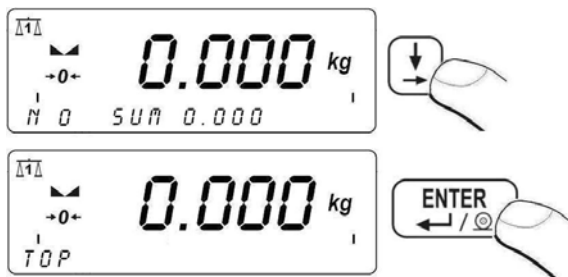
Notice:

Users can use this function in other work modes like counting pieces, weighing in percents etc. Only values and units can change.

24.3. Maximal force latch


Procedure:

- Enter the **TOP** work mode:



- **TOP** selection is signalled by the **Max** pictogram in the upper line of the display:



- When a force acting on the pan changes on the display only the maximal value can be seen,
- Remove the acting force,
- Press  before the next measurement.

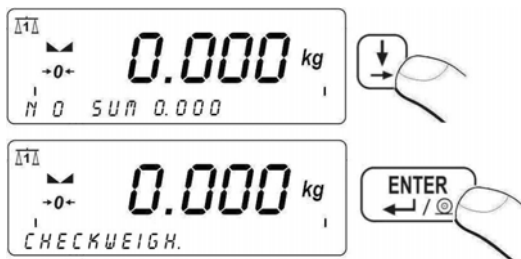
Return to weighing:

See 11.3.

24.4. Deviation in percents in relation to a standard mass

Software can help to control deviations (in %) from a standard (nominal) mass. The standard mass can be settled by weighings or inscribing.

24.4.1. Starting weighing in per cents

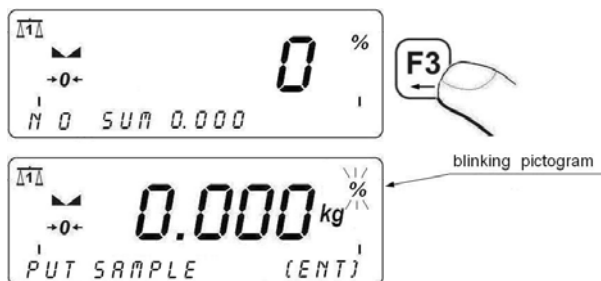



- Selection of **DEVIATIONS** is confirmed by displaying “%” pictogram in the upper right corner of the display

24.4.2. Weighing a standard mass

Procedure:

- Enter **DEVIATIONS** and then:



- Put a load to be a standard mass on the weight pan,
- After the equilibrium is reached (▲) press ,
- You will see the indication of **100,00%**,
- From this moment all results will be displayed in percents:



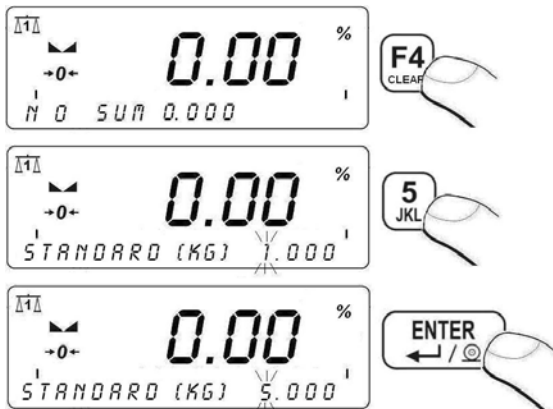
Return to weighing:

See 11.3.

24.4.3. Inscribing a standard mass

Procedure:

- Enter **DEVIATIONS** and then:



From this moment all results will be displayed in percents.



Return to weighing:

See 11.3.

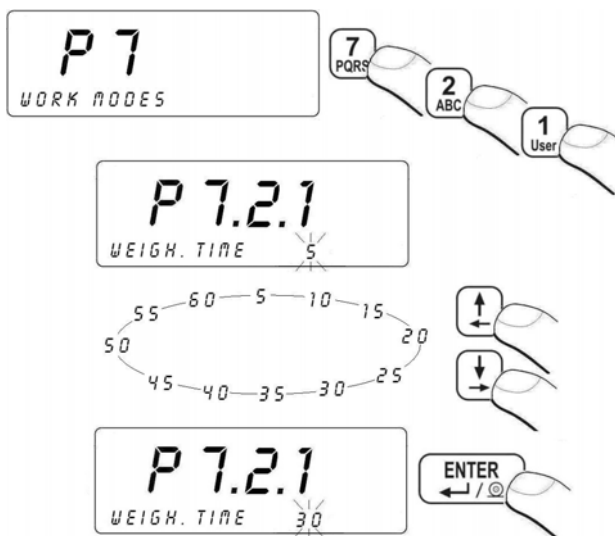
24.5. Weighing animals

24.5.1. Weighing time setting

Users can set in seconds the time of weighing

Procedure:

Enter **<P7 WORK MODES>** and then:



Return to weighing:
See 11.3.

24.5.2. Starting the work mode



- **WGH. ANIMALS** mode is signalled by showing ► pictogram in the right side of the picture.

24.5.3. Procedure of weighing animals

- After starting **ANIM. WEIGH.** (see 24.5.2) put the animal on the platform,
- Press **F3** to start the process of weighing,
- You will see a set of dashes on the display <--- --> showing the progress of weighing during the time set in **<P7.2.1 AVER. TIME>** - (see 24.5.1),
- After the procedure of weighing is completed the result will be latched,
- Additionally you will hear a short “beep” sound and see **Hold** pictogram in the left part of the display:



- Before initiating the next weighings press ***0*** key,
- Weighing procedure can be terminated while in progress by pressing **ESC**.

Return to weighing:

See 11.3.

24.6. Dosing

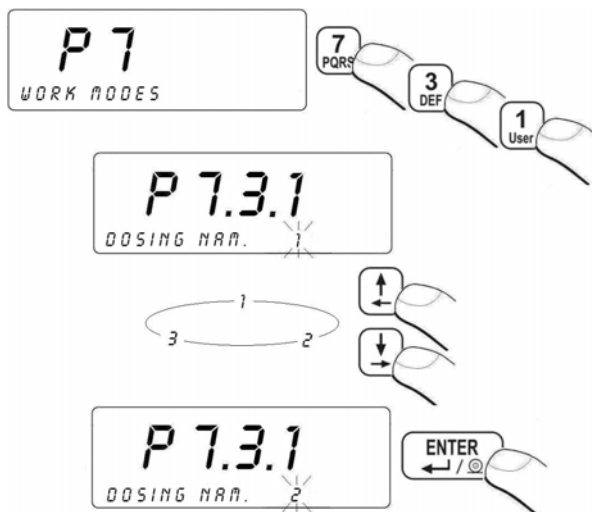
Standard indicator is equipped with signalling fields and internal circuit of - 3 optoinsulated inputs (5÷24V DC), 3 optoinsulated reed relay outputs.

24.6.1. Setting dosing mode

Users can chose one of three different modes **<P7.3.1 DOSE. MODE>**.

Procedure:

- Enter **<P7 WORK MODES>** and then:



DOSE. MODE	1	- manual operation (after pressing F3)
DOSE. MODE	2	- automatic operation,
DOSE. MODE	3	- „-“ negative dosing (after tarring +T+ and pressing F3).

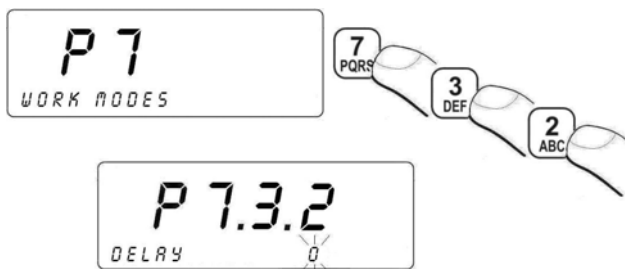
Return to weighing:
See 11.3.

24.6.2. Time interval between changing dosage thresholds

By setting **<P7.3.2 DELAY>** parameter users can set a delay time between changing dosing thresholds.

Procedure:

- Enter **<P7 WORK MODES>** and then:



Using numeric keys inscribe the required value (0 to 60 s) and confirm by pressing **ENTER** (↵ / Ⓜ).

Return to weighing:

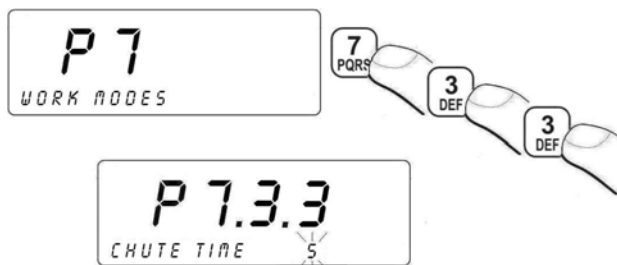
See 11.3.


24.6.3. Time interval of process completion

Users can set **<P7.3.3 CHUTE TIME>** parameter to change time of completing a process of dosing after indication drops below **LO**.

Procedure:

- Enter **<P7 WORK MODES>** and then:



Using numeric keys inscribe a requires value (0 to 60 s) and confirm by pressing .

Return to weighing:

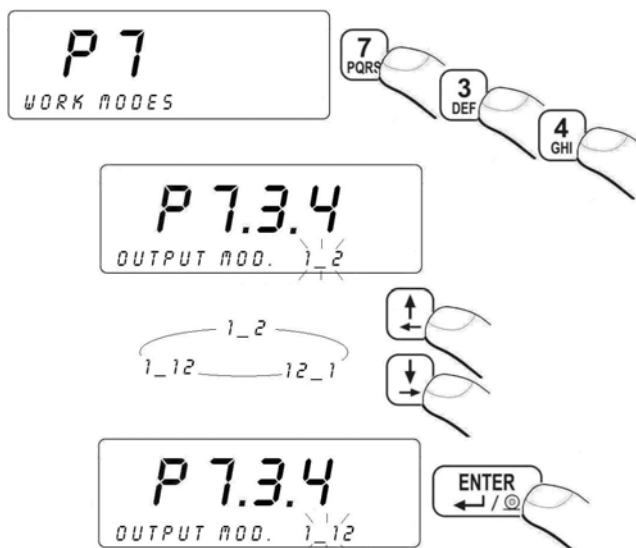
See 11.3.

24.6.4. Mode for OUTPUTS

Software includes three different algorithms operating on OUTPUTS that allows the device to readjust to the customer's requirements.

Procedure:

- Enter **<P7 WORK MODES>** and then:



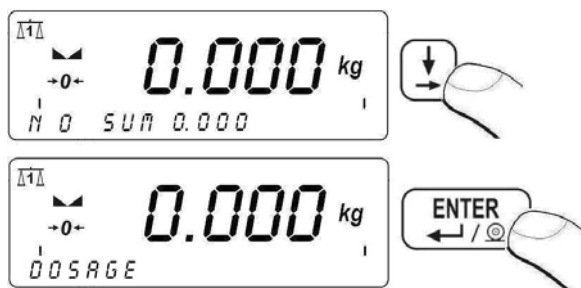
OUTPUT MOD.	Threshold	Rough dosing	Precise dosing
1_2	THERSHOLD 1	1	0
	THERSHOLD 2	0	1
12_1	THERSHOLD 1	1	1
	THERSHOLD 2	1	0
1_12	THERSHOLD 1	1	1
	THERSHOLD 2	0	1




Return to weighing:
See 11.3.

NOTICE:

If dosing is initiated when the indication is > LO , after reaching the indication below LO output (outputs) will be automatically switched on. Subsequent dosing process can be started when indication goes below LO.

24.6.5. Starting work modes



After entering the **DOSING** mode the  pictogram is displayed. Press  to start a dosing process. After starting it  starts blinking, keyboard is blocked until the process is completed.

The process completion is signaled by displaying a message:
< **END OF DOSING** > in the bottom line of the display:



This process can be stopped only by pressing **F4** CLEAR. A message will be displayed in the bottom line: < **STOP DOSING** >.



When the procedure is broken or completed  is displayed continuously.

Dosing process can be also terminated by pressing **F2** OK. You will see:



Pressing **F3** - will cause the process to continue.

Pressing **F4** CLEAR will cause the process to break.

Return to weighing:

See 11.3.

25. COUNTING PIECES OF THE SAME MASS

The intended use of these scales is **counting pieces of the same mass**. They can be connected to CITIZEN CLP or ZEBRA label printers. EPSON TM-U220 slip printers can be also connected.

Procedure of set-up:

1. Set appropriate parameters in **<P7.4 COUNTING PCS.>** (see 25.1).
2. Select a product from the assortment database.

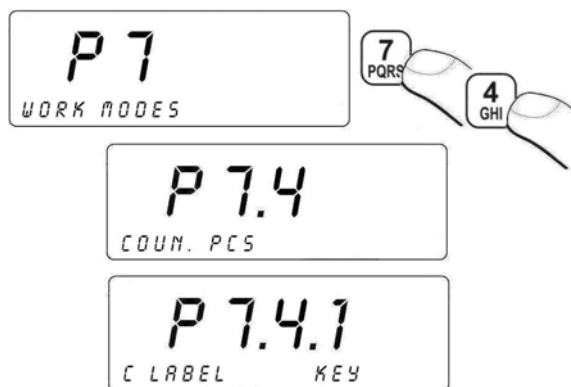
After setting parameters you can start the procedure of counting pieces.

Caution:

The description of parameters of CITIZEN CLP and ZEBRA printers you can find in the appendix B or appendix C of this manual.

25.1. Setting parameters for counting pieces operation mode

- Enter **<P7 WORK MODE>** and then:



- In the bottom line of the display you can see the first parameter to set.

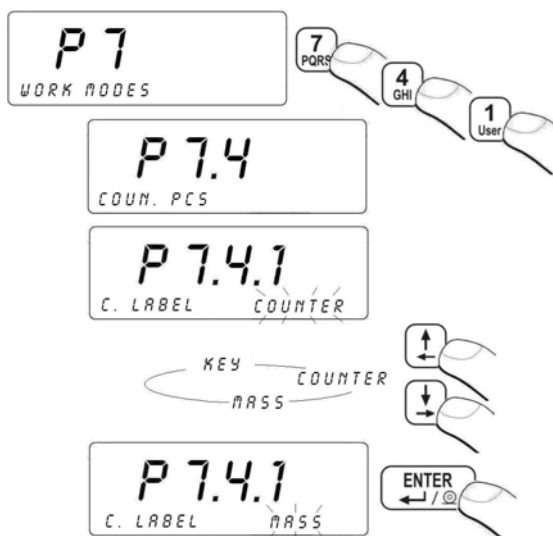
Parameters for counting pieces:

O. n	NAME	DESCRIPTION
P7.4.1	C. LABEL	The way of trigerring up printing of c. labels
P7.4.2	CC. LABEL	The way of trigerring up printing of cc. labels
P7.4.3	N 1	Counter state to exceed for trigerring up printing of c. labels
P7.4.4	M 1	Quantity of pieces to exceed for trigerring up printing of c. labels
P7.4.5	N 2	Counter state to exceed for trigerring up printing of cc. labels
P7.4.6	M 2	Quantity of pieces to exceed for trigerring up printing of cc. labels
P7.4.7	EAN PT. POS.	Point position (number of digits after the point) for quantity / mass in EAN13 code for goods with different quantity / mass
P7.4.8	AUTO COR.	Automatic accuracy correction

25.1.1. The way of trigerring up C LABELS

Procedure:

- Enter <P7 WORK MODE> and then:

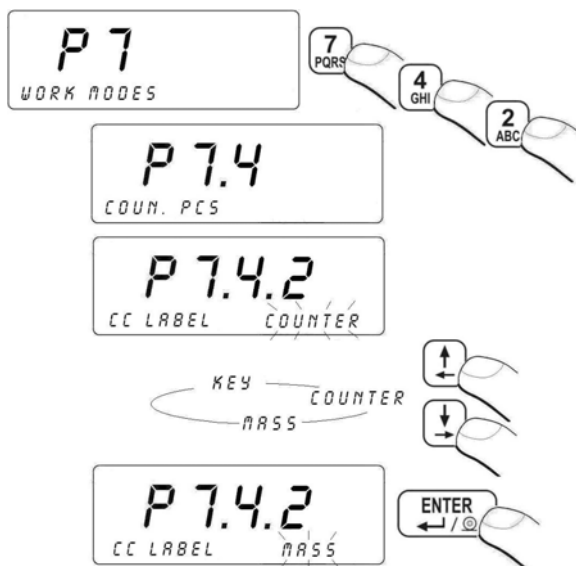


C. LABEL	KEY	- trigerring up printing by pressing PRINT
C. LABEL	COUNTER	- trigerring up printing by exceeding N1,
C. LABEL	MASS	- trigerring up printing by exceeding M1 quantity

Return to weighing:
See 11.3.

25.1.2. The way of trigerring up CC LABELS


Procedure:




CC. LABEL	KEY	- trigerring up printing by pressing PRINT
CC. LABEL	COUNTER	- trigerring up printing by exceeding N2,
CC. LABEL	MASS	- trigerring up printing by exceeding M2 quantity

Return to weighing:
See 11.3.


25.1.3. Setting N1 label counter

- Enter <P7.4.3 N1> parameter,
- Inscribe the required value of **N1** for triggering up c labels,
- Confirm the value by pressing .


25.1.4. Setting quantity of pieces - M1

- Enter <P7.4.3 M1> parameter,
- Using the keyboard inscribe the required **M1** for triggering up c labels,
- Confirm the value by pressing .

25.1.5. Setting N2 c. label counter

- Enter <P7.4.5 N2> parameter,
- Inscribe the required value of **N1** for triggering up cc labels
- Confirm it by pressing .

25.1.6. Setting quantity of pieces M2

- Enter <P7.4.6 M1> according to,
- Using the keyboard inscribe the required **M2** for triggering up cc labels,
- Confirm it by pressing .

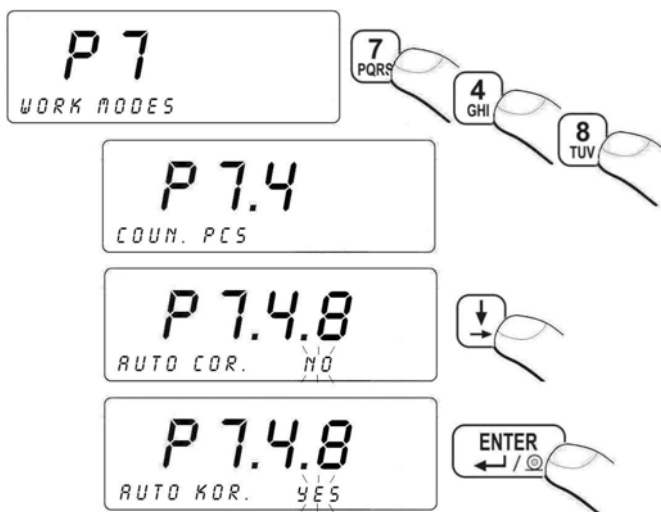
Return to weighing:


See 11.3.

25.1.7. Automatic Correction of Accuracy

The function of **Automatic Correction of Accuracy** can be used for correction of unit mass (**SMP**). In order to enable the function:

- Enter <P7 WORK MODE> and then:

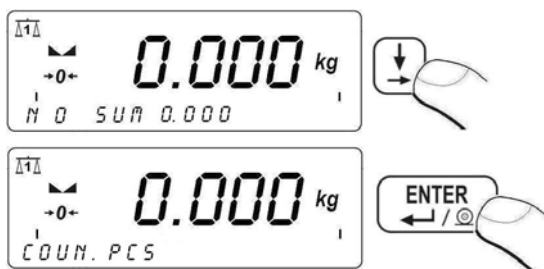



The function of **Automatic Correction of Accuracy** in counting pieces works during weighing the reference quantity and is signaled by blinking  pictogram in the upper right corner.

Return to weighing:

See 11.3.

25.2. Enabling work mode



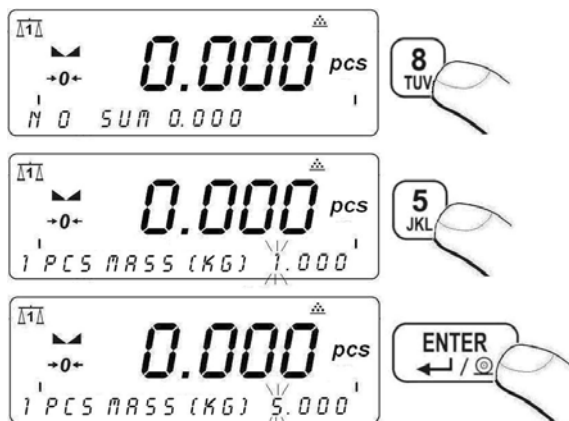
- When counting pieces is enabled  pictogram is displayed in the upper right corner.

25.3. Setting the mass of single piece

25.3.1. Before inscribing the unit mass

Procedure:

- Enter **COUNTING PIECES** and then:



Pressing  causes return to **COUNTING PIECES** with automatic adjustment of reference.

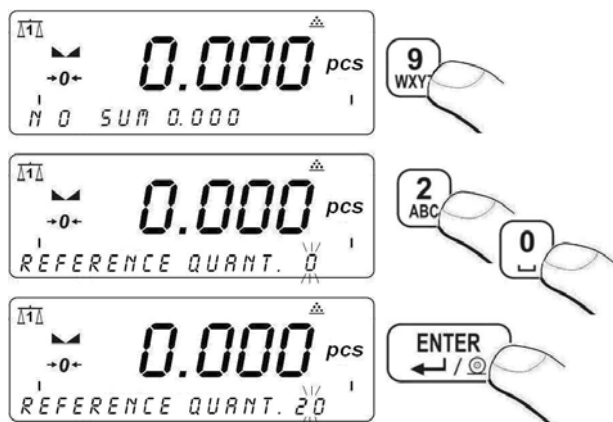
CAUTION:

You cannot inscribe a unit mass greater than the maximal capacity of a main scale or lower than 0.1 of the reading division of the scale.


25.3.2. By declaring reference quantity

Procedure:

- Enter **COUNTING PIECES** and then:



When inscribing a reference quantity, remember that the unit mass Cannot be lower than **0.1 of reading division** and the total reference mass Cannot be lower than **1 reading division**. If these conditions are not fulfilled an error message will be displayed.

- After confirming the inscribed value by , the program will display:




If pieces are weighted in a container, it should be put on the pan and tared and then put the declared value of the reference quantity. When stable (▲) confirm the measurement.

Software will automatically calculate the unit mass and return to counting pieces with indication of number of pieces:

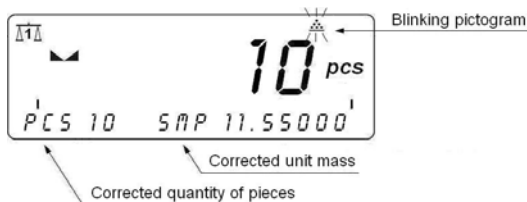


Caution:

When the reference mass is confirmed by  and the pan is empty, the display will show „Err6” and the program return to the previous step.

If <P7.4.8 AUTO COR.> parameter is set to **YES** program will activate the function of **Automatic Accuracy Correction**.

The reference quantity can be increased by adding subsequent pieces. Number of pieces and unit mass (**SMP**) will be automatically corrected by software and show in the bottom line of the display:



There are four conditions of working of Automatic Accuracy Correction:

1. quantity of pieces should be increased
2. addend quantity of pieces should not be greater than double number of pieces on the pan.
3. The new sample can be different from the old sample by ± 0.3 of pcs (absolute value),

Example:

First weighing:



50 pcs, 1 pcs=0.5g, total=25g

Second weighing:

50+30 pcs, total=39.7g

It means that having a unit mass 0.5g we have 79.4 pcs. The expected value was 80 pcs. The difference is 0.6 that is greater than 0.3 and Auto-correction cannot work.

4. equilibrium should be reach.

If a user recognises the reference quantity to be adequate, he can save the unit mass (see 25.4). At the same time the function of Automatic Correction of Accuracy will be switched off what is signalled by continuous display of the  pictogram. Users can also stop the operation of the function by pressing .

Caution:

Automatic Accuracy Correction works only for main scale.

Return to weighing:

See 11.3.

25.3.3. By entering a unit mass from the database

After selecting a product from the assortment database, the unit mass is ascribed.

Procedure:

While in counting pieces press  - assortment database.

Select a required product (, ) and confirm with .





Caution:

The selected product has to have a declared unit mass.


You can inscribe it by editing a record from the database.

25.4. Inscribing the unit mass to the database

The unit mass can be described a unit mass the following way:

- Estimate the unit mass (see 25.3.1., and. 25.3.2.),
- Enter the assortment database ,
- Select the product (using , ) ,
- Press , in the lower line you can see:



- Confirm the unit mass with ,
- The unit mass is saved.

26. BEGINNING LABELLING

First inscribe/load appropriate data to databases (assortment, operators, materials, contractors). Then set some labelling parameters (see 25.1). Now you can start labelling.





26.1. Quick search of records in databases

While in a database inscribe an ordinal number of a record. The program automatically displays the expected number.

Notice:

When you inscribe an ordinal number that has no associated record the present cursor position will not change.




26.2. Selecting products

While in the labelling mode press  - assortment database. Selection appropriate product (press  or ) and confirm it with .

It is possible a quick search in the assortment database using barcode scanners (see 15.3).

26.3. Selecting a contractor

While in labelling mode press  - contractors' database.


We select a constructor ( or ) and confirm it with .

26.4. Selecting general purpose variables

While in labelling press  - database of general purpose variables.

Choose an appropriate variable ( or ) and confirm it with .

26.5. Thresholds for checkweighing (MIN, MAX)


While in counting pieces press . Further procedure of entering thresholds' values according to 23.2.

26.6. Loading patterns of labels



Users can download label patterns to the printer memory using „EDYTOR ETYKIET”. Look up program help files for more information.

26.7. Algorithm

After loading appropriate label patterns to the scale, filling in databases and setting the related parameters proceed as directed in **12. WEIGHING**).

Labels are printed after pressing . In the bottom line subsequent weighings counter are displayed and total number of pieces.

If the selected product is not changed after the display indicates zero put subsequent batch of goods and press  after stabilising.

Press  to change the product – enter the assortment database, select the required product and press .


26.7.1. Printing of cumulative labels

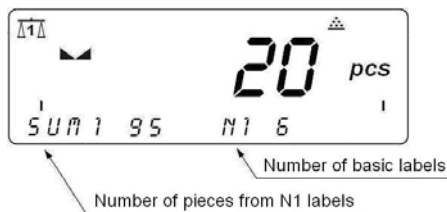
Cumulative labels „**C LABELS**” are for printing total values from simple labels. Those labels are for bulk containers comprising a number of single goods. E.g. a package contains 20 cans of peace. Cumulative labels need to be defined for the product.


There are three criteria of printing cumulative labels:

- After exceeding the given number of weighings of one product („**N1**” counter),
- After exceeding the total mass of weighings „**M1**”,
- Printing appears after pressing a key.

To print using keys :

- Press , and you will see:



- press ,
- cumulative label is printed and **N2** counter and total number of pieces - **SUM2** however **N1** counter and **SUM1** are zeroed,
- the program returns to labelling.

Notice:

In case of necessity of printing labels by using keys set <P7.4.1 C LABEL> to KEY.

26.7.2. Printing cumulative labels of cumulative labels

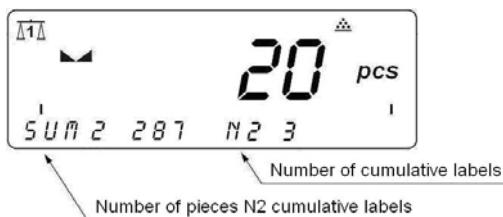
CC labels holds data from the whole process of labelling of one product e.g. for marking pallets or big containers with goods.
Cumulative labels of cumulative labels need to be defined for the product.


There are three criteria of printing cc labels:

- After exceeding the given number of c labels of one product („N2” counter),
- After exceeding the total quantity of pieces for c labels „M2”,
- Printing anytime after pressing a key.

You can print cc label anytime:

- press  and then  and you will see:



- press ,
- cc label will be printed out and „N2” counter and „SUM2” total quantity will be zeroed,
- program returns to labelling mode.

Notice:

In order to have the possibility to print cc labels set the <P7.4.2 CC LABEL> parameter to KEY.

26.7.3. Triggering „C LABEL” by exceeding „N1” value

Labelling procedure gives the possibility of triggering c labels by exceeding the „N1” value.

- set „N1” according to 26.1.3,
- return to the labelling mode,
- after exceeding the „N1” value label will be printed out („N2” counter and „SUM 2” will change, but „N1” and „SUM 1” will be zeroed),
- program returns to labelling mode.

26.7.4. Triggering „CC LABELS” by exceeding „N2”

It is possible to trigger out printing cc labels by exceeding „N2” .

- set „N2” according to 26.1.5 ,
- return to labelling,
- After exceeding „N2” cc label will be printed out („N2” counter and „SUM 2” will be zeroed),
- program returns to labelling mode.

26.7.5. Triggering „C LABELS” by exceeding „SUM 1”

It is possible to trigger out printing cc labels by exceeding „SUM 1”:

- set „SUM 1” total quantity of pieces according to 26.1.4,
- return to labelling,
- after exceeding „SUM 1” total mass of weighings c label will be printed („N2” and „SUM 2” will be increased and „N1” and „SUM 1” will be zeroed),
- program returns to labelling mode.

26.7.6. Triggering „CC LABEL” by exceeding „SUM 2” value

It is possible to trigger out printing cc labels by exceeding „SUM 2”:

- Set the „SUM 2” value according to 26.1.6,
- return to labelling,
- after exceeding „SUM 2” cc label will be printed out („N2” and „SUM 2” will be zeroed),
- program returns to labelling mode.

27. BARCODES

27.1. General description

Barcodes are the most popular form of automatic identification of articles. They are used to describe documents and products to allow automatic loading data to computers. Barcode scanners are used to interpret barcodes and send information to external devices. For receiving overprints of barcodes are used label printers. (e.g. CITIZEN, ZEBRA)

There are many barcode types with different information content. Barcodes are graphical interpretation of information in dark and white strips of different width. The main objective of using codes is speeding up and increasing faithfulness of read information, which substituted manual entering of information.

The number of industries which adapt barcode technologies is continuously growing. More and more firms build their automatic identification system on the basis of barcode scanners.

Scanning technology for barcodes reading:

- laser – longer scanning range (e.g. QS-6000+, Cubit)
- diode – durable, faster operation (e.g. Dioder, QS-2500)

27.2. EAN codes

One of the most popular barcodes are EAN (European Article Numbering), which were approved for common use in retail trade in 1976. American equivalent is UPC.

EAN code types:

- EAN-13 (12 data digits and checksum)
- EAN-8 (7 data digits and checksum).
- EAN-128 (digital version of CODE 128)

First 3 digits signify a country (e.g. 590 - Poland), with the exception of codes that start with the digit 2 – these codes are used to mark articles of different weight and dimensions especially packed in shops. EAN 13 is used together with ISSN (International Standard Serial Number), for newspapers and magazines. 3-digit country code is substituted by 977.

27.3. Other barcodes

- Code 39 – Alphanumeric barcode with variable length. It allows to us 43 different characters; each character comprises 9 elements (dark and white strips).
- Code 128 – Alphanumeric barcode with variable length devised to expand Code 39 possibilities.
- Interleaved 2 of 5 – Numerical code with variable length (always even). High density – digits coded in pairs "with interleave" – dark strip code one digit and white (separable) the second.

27.4. Advantages of using barcodes

Some advantages from using barcodes:

- Less errors during data input in comparison to manual inscribing
- Quick data loading – direct input to external devices
- Costs – more efficient client service, simpler reserves management, shorter reaction time, lower level of reserves.

Barcode technology allows to:

- Monitor commercial transactions,
- survey stored reserves
- supervise warehouse transactions collecting, decomposing, palletization etc.
- shorten time of loading and unloading goods
- monitor production in real time
- monitor reserves

27.5. The usage of EAN-128 barcode in HX terminals

The EAN-128 barcode standard has been created to provide a worldwide standard for exchanging simple data between enterprises. Other codes include data without marking what they include. EAN-128 encrypts data together with information about it.

For example, when coding 17,21 kg as 1721 an application does not know if it is a price, time or mass. Even if the application can identify this field as weight it has no information about unit and point (1721 kg or 17.21 g).

It is important that everybody can decode the information without any additional modifications. EAN-128 standard solves this problem. It includes a list of "Application Identifiers". Every identifier carries a message to inform a system about the data type and format. E.g. 310 identifier indicates for the net mass in kg. The next digit in this identifier outlines the point position, then the following 6 digits outline a weight.

Application Identifiers

Description	AI	Format
Serial Shipping Container Code	00	exactly 18 characters
Shipping Contained Code	01	exactly 14 characters
Number of containers contained in another unit (used with AI 37)	02	exactly 14 characters
Batch Numbers	10	Up to 20 characters
Production Date (YYMMDD)	11	exactly 6 characters
Packaging Date (YYMMDD)	13	exactly 6 characters
Sell By Date (Quality Control) (YYMMDD)	15	exactly 6 characters
Expiration Date (Safety Control) (YYMMDD)	17	exactly 6 characters
Serial Number	21	Up to 20 characters
Lot Number	23*	Up to 19 characters
Quantity Each	30	
Product Net Weight in Kg	310**	exactly 6 characters
Product Length/1st Dimension (Meters)	311**	exactly 6 characters
Product Width/Diameter/2nd Dimension (Meters)	312**	exactly 6 characters

Product Depth/Thickness/3rd Dimension (Meters)	313**	exactly 6 characters
Product Area (Square Meters)	314**	exactly 6 characters
Product Volume (Liters)	315**	exactly 6 characters
Product Volume (Cubic Meters)	316**	exactly 6 characters
Product Net Weight (Pounds)	320**	exactly 6 characters
Number of Units Contained (Used with AI 02)	37	Up to 8 characters
Dispatch number	401	Up to 30 characters
Purchase From Location Code (EAN13 or DUNS code)	412	Exactly 13 characters
Ship To/Deliver To Postal Code (Single Postal Authority)	420	Up to 20 characters
Roll Products - Width/Length/Core Diameter	8001	exactly 14 characters
Electronic Serial Number (ESN) for Cellular Phone	8002	Up to 20 characters

* additional digit outlines the length of a field

** additional digit for outlining the point position. Values 00-50 in RR of date field is interpreted as 2000-2050, and 51-99 as 1951-1999.

Identifiers facilitate using this standard in HX terminal. Following variables has been added:

- General purpose variables,
- Net mass in EAN 128,
- Net mass (lb) in EAN 128,
- Gross mass EAN 128,
- Date in EAN 128,
- cumulative mass in EAN 128,
- cc mass in EAN 128,
- Product price in EAN 128,
- A+DATE in EAN 128,
- expiration date in EAN 128



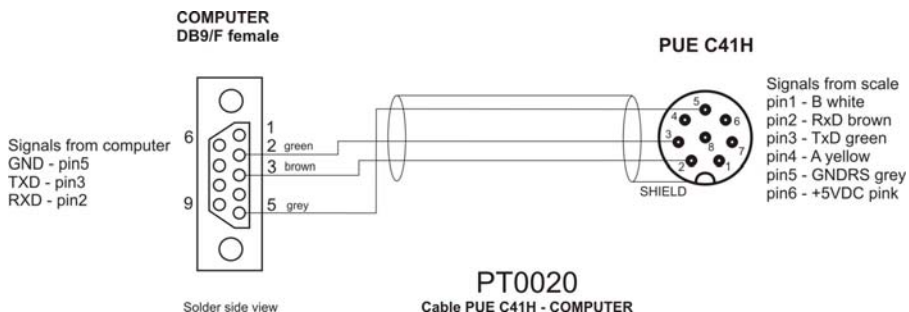
(01) 01234567890128(15) 051231

Example code. Application identifiers in brackets

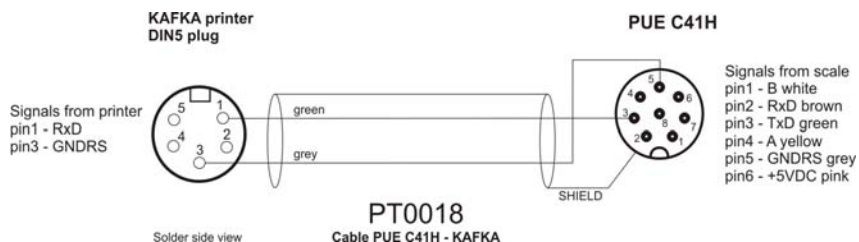
28. DIAGRAMS OF CONNECTION CABLES

STANDARD assembly terminal can cooperate with:

- computers
- slip printers KAFKA, EPSON,
- label printers CITIZEN, ZEBRA,
- external buttons PRINT, TARA, ZERO,
- internal I/O module of 3 optoisolated inputs / 3 reed relay outputs.

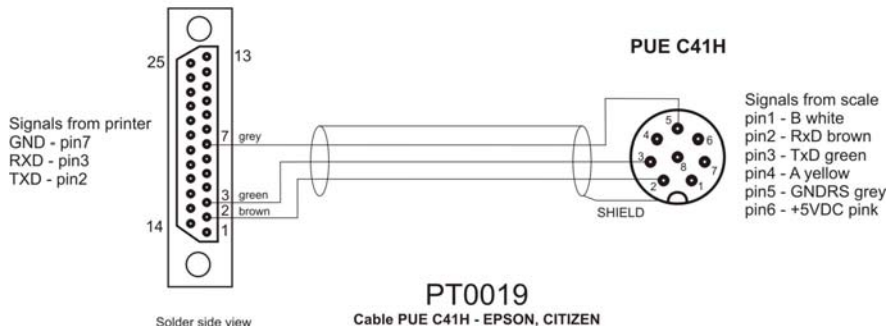


Scale-computer cable



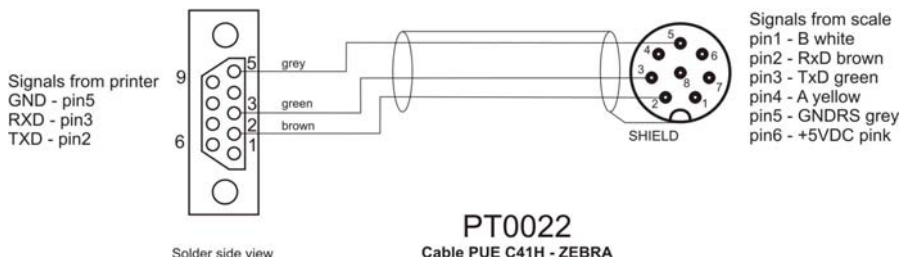
Scale – Kafka printer cable

**EPSON, CITIZEN printer
DB25/M male**



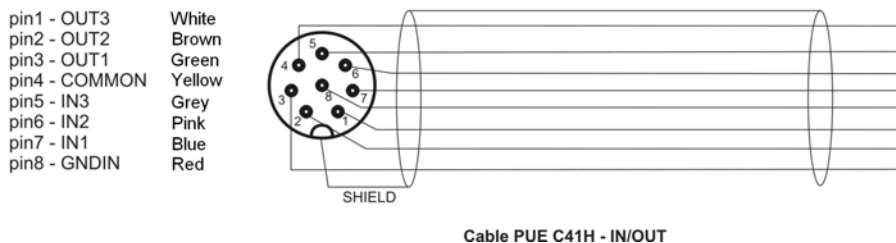
Scale –Citizen, Epson printer cable

**ZEBRA printer
DB9/M male**



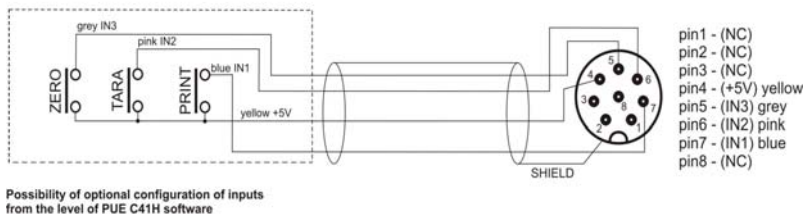
Scale – Zebra printer cable

PUE C41H



Scale - I/O cable

PUE C41H



PT0021

External Buttons PRINT, TARA, ZERO to PUE C41H

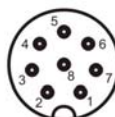
PRINT, TARA, ZERO external buttons cable

29. CONNECTORS

Caution:

In accordance to the number of mounted modules the number and the placement of glands and connectors can vary. Connectors and glands mentioned in the standard solution appears in every option in the same place regardless of the option.

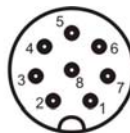
pin1 - OUT3 (NC)
pin2 - OUT2 (NC)
pin3 - OUT1 (NC)
pin4 - COMMON (+5V)
pin5 - IN3 (IN3)
pin6 - IN2 (IN2)
pin7 - IN1 (IN1)
pin8 - GNDIN (NC)



IN/OUT

I/O connector

pin1 - B (RS485)
pin2 - RxD
pin3 - TxD
pin4 - A (RS485)
pin5 - GNDRS
pin6 - +5VDC



**RS232
RS485**

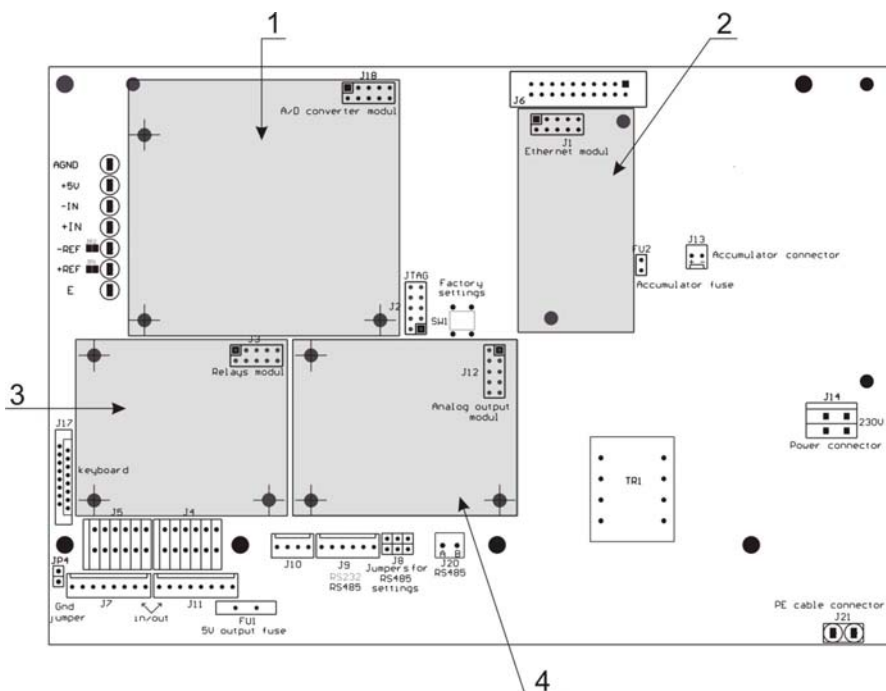
RS232, RS485 connector

30. SPECIFICATION OF ADDITIONAL MODULES

Apart from standard interface, it is possible to equip terminals with additional module increasing functionality of devices:

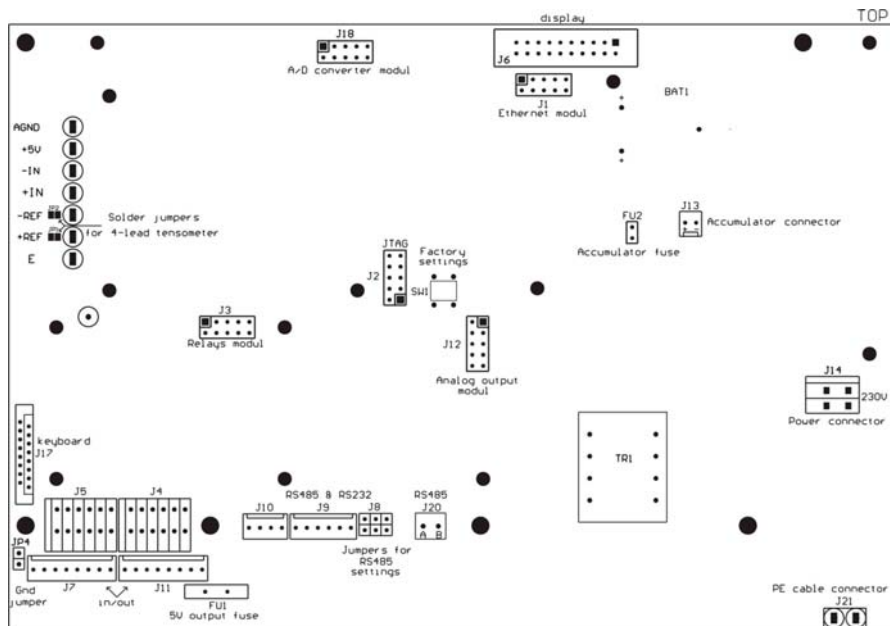
- **ET** - Ethernet module,
- **AN** - analogue outputs module,
- **PK 1** - relay outputs module,
- **WE 8** - 8 inputs / 8 outputs module,
- **WE 4** - 4 inputs / 4 outputs module,
- **DP 1** - Additional A/D converter module (for second platform)
- **RS D1** – RS485 led out via a gland

Main board view with some additional modules being installed:



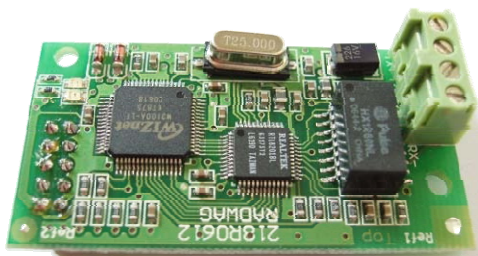
- 1 - additional A/D module,
- 2 - Ethernet module,
- 3 - relay outputs module,
- 4 - analogue output module.

Main board view with connectors for additional modules:



- J18 – DP 1 module
- J1 – Ethernet ET 1G, ET 1 D module
- J3 – Relay module
- J12 – WE 8 module
- J12 – AN module

30.1. Ethernet module - ET



Ethernet module PCB

This module is designed according to TCP/IP 10/100 Mbit/s standard. It comprises two signalling LED's:

- D2 lights - Ethernet connection established,
- D1 blinks - transmission 10Mbit/s or 100Mbit/s.

Module accessible in two versions:

ET 1G : with external connector on the scale housing;

ET 1D : with cable (twisted pair) about 3m length led out via the gland on the scale housing. Intended for connecting to a switch (not computer). Terminated with a standard RJ45 plug.

30.1.1. Mounting way in PUE C41H

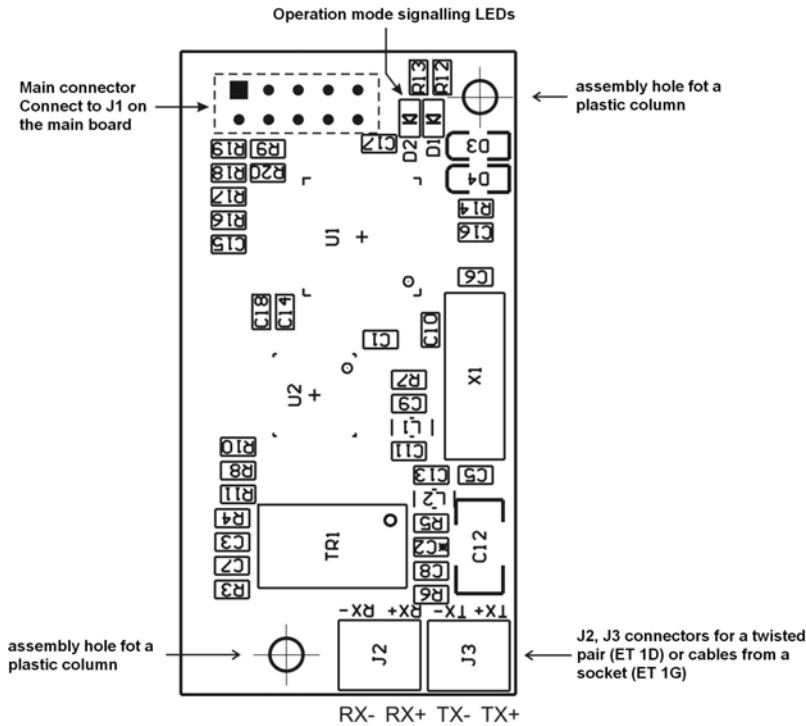
This module is intended for mounting inside PUE C41H indicators. It is mounted to the main board to the 10-pin **J1** connector.

- For **ET 1G** version of module a 4-pin Ethernet connector is installed on the back wall of the housing.
- For **ET 1D** version of module a gland is installed on the back wall of the housing through which a shielded cable is led out (twisted pair 3m length terminated with RJ45 plug).

Mounting procedure:

1. Unplug from mains;
2. Unscrew the back wall of the housing;
3. Install the module in **J1** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module;
5. For ET 1G unscrew one of the plugged glands and install a socket instead;
6. For ET 1G version connect wires from **PT0017** socket to **J2** and **J3** connectors on the Ethernet module according to the description below;
7. For ET 1D version unplug one of the glands and led the **PT0014** (twisted pair) cable out;
8. For ET 1D version connect the shield of **PT0014** cable to the indicator housing (screwed terminator, 4mm diameter);

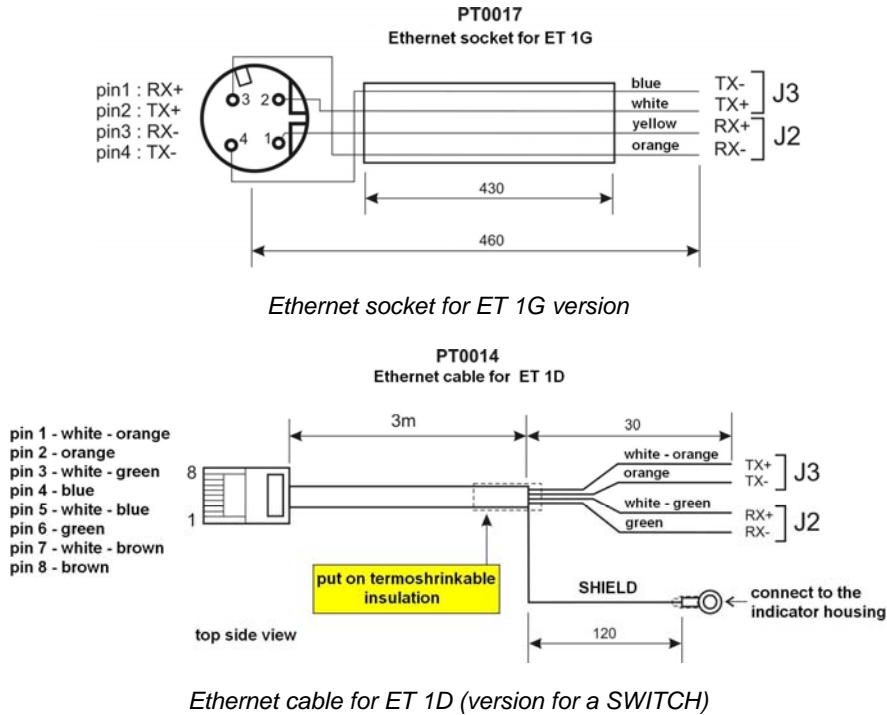
9. Connect the **PT0014** cable to **J2** and **J3** connectors on the Ethernet module according to the description;
10. Cable (twisted pair) or wires from the Ethernet socket connect to the group of wires (unhook band clips fastening the group of wires, lay the cable or conductors from the socket and hook the band clips). Band clips of multiple usage;
11. Screw down the back wall.



TX+ white - orange	J3	Colours of wires in the twisted pair cable from PT0014 for ET 1D
TX- orange		
RX+ white - green	J2	
RX- green		
TX+ white	J3	Colours of cables from PT0017 for ET 1G
TX- blue		
RX+ yellow	J2	
RX- orange		

Ethernet module on the main board of PUE C41H

30.1.2. Drawings of sockets and cables for Ethernet



30.2. Analogue output module



Module of analogue outputs

Module accessible in three configurations:

- Voltage output AN 0-10V
- Current output AN 4-20mA
- Current output AN 0-20mA

30.2.1. Technical specification

Work modes	4 - 20mA , 0 - 20mA, 0 - 10V
Resolution	16 bit
Current output resistance	<500Ω
Voltage output resistance	>400Ω
Power supply	24V DC (12 - 30V DC) max 40mA

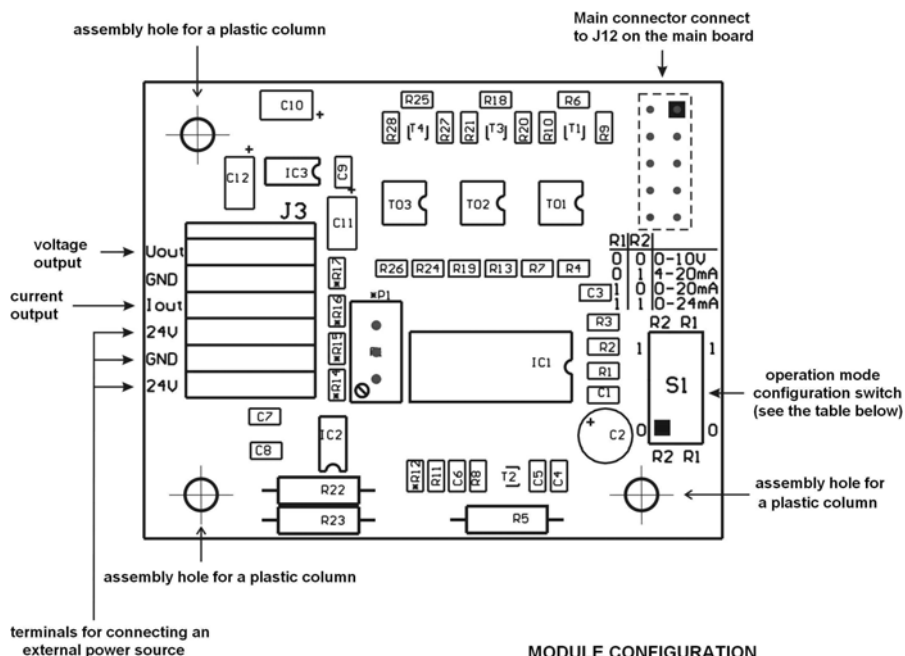
30.2.2. The way of installing inside PUE C41H

These modules are intended to mount inside PUE C41H.

They need to be connected to the 10-pin J12 connector. For all configurations of AN, there is a gland installed on the back wall of the housing. A 3-meter shielded cables are led out via the gland. Wires should be free from insulation.

Installing procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in J12 on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module;
5. Led the PT0015 cable through one of the free glands;
6. Connect the PT0015 cable to J3 on the analogue module according to the description below;
7. Connect the PT0015 cable shield to the housing (screwed terminator, 4mm diameter);
8. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
9. Screw down the back wall.



ANALOGUE OUTPUTS' MODULE CURRENT
LOOP 4-20 mA SET AS DEFAULT

MODULE CONFIGURATION

R1	R2	Operation mode
0	0	0-10V
0	1	4-20mA
1	0	0-20mA
1	1	0-24mA

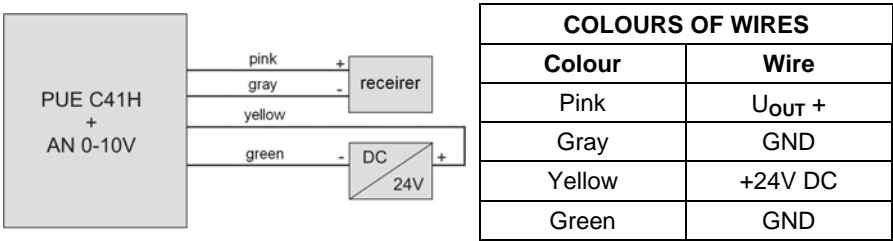
Mounting of **AN** module on the main board of PUE C41H

30.2.3. Configuration of work modes of analogue modules

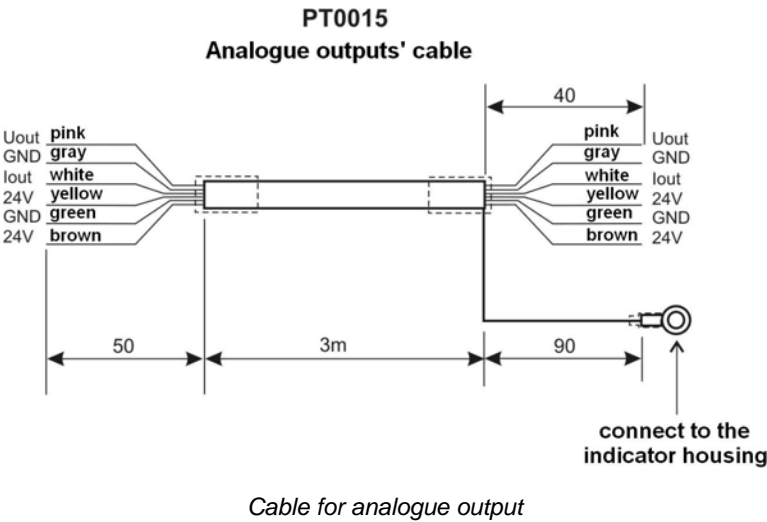
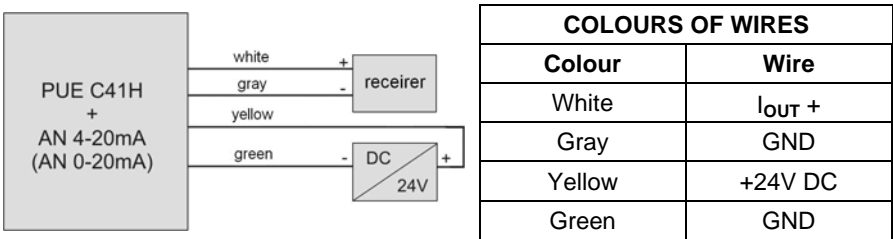
A work mode of analogue modules can be set using **S1** switch according to the drawings above (table „configuration of analogue modules”). Near the **S1** switch on the PCB you can find a description.

30.2.4. Connections to AN module

Drawing of connections of voltage output:



Drawing of connections of current loop:



30.3. Relay module - PK1



Relay module PCB - PK1

This is an alternative solution for reed relay outputs present on the main board in the standard solution. The usage of this module excludes the usage of standard reed relay outputs. The advantage of using this module are the electrical parameters of contacts. All outputs can be freely configured (from the level of parameters). The cable is led out via a gland on the back wall of the housing (3m length).

30.3.1. Technical specification

Quantity of relays	4
Output type	Operating contacts
Wire diameter	0,14 ÷ 0,5mm ²
Current-carrying capacity of contacts	230V AC - 2A, 30V DC - 2A

CAUTION:

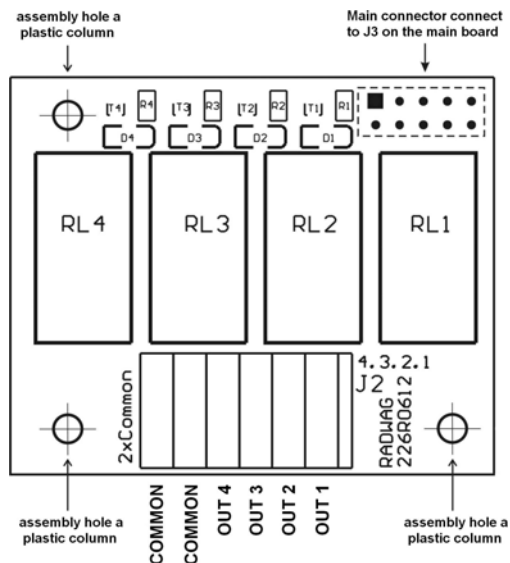
When inductive load it is advisable to use a suppression circuit (LC or voltage-dependent resistors) installed next to the receptor. Parameters of these circuits are determined by clients.

30.3.2. Installing in PUE C41H indicators

These module are intended to mount inside PUE C41H indicators. It is mounted to the main board to the 10-pin **J3** connector. An additional gland is installed on the back wall and a 3m cable is led out through it Wires should be free from insulation.

Installing procedure:

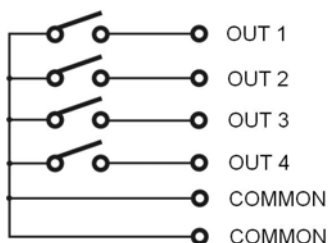
1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in **J3** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module PK1;
5. Led the **PT0016** cable through one of plugged glands;
6. Connect the **PT0016** cable to **J2** connector on the PCB according to the description below;
7. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
8. Screw down the back wall.



Installing a PK1 module on the main board of PUE C41H

30.3.3. Drawing of cables and outputs

Relay outputs diagram:



Wires	
Colour	Description
Brown	Common
Green	Common
Yellow	OUT4
White	OUT3
Gray	OUT2
Pink	OUT1

Technical specification of the module:

Number of relays	4
Output type	Operating contact
Wire intersection	0,14 ÷ 0,5mm ²
Load-current capacity	230V AC - 2A, 30V DC - 2A

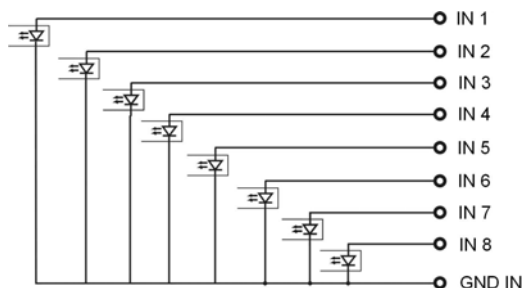
CAUTION:

Module of relays is an alternative solution for reed relays that are present on the main board, using this module excludes using reed relays.

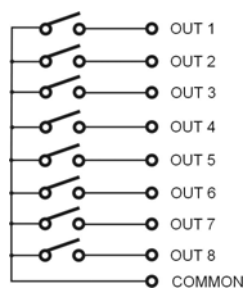
30.4. WE 8 - 8 inputs / 8 outputs module

WE 8 module can be connected as an alternative to the module of analogue output and relay module. Its task is to expand the functionality of an indicator for 8 inputs and 8 outputs freely configurable. It expands functionality of terminals. It comprises on board optoisolated inputs and outputs freely configurable from the level of indicator.

I/O diagram:



WE8 inputs diagram



WE8 outputs diagram

Description of input output wires:

Cable with 18x0,5mm² numbered wires.

INPUTS		OUTPUTS	
Wire number	Input description	Wire number	Output description
1	IN1	10	OUT1
2	IN 2	11	OUT2
3	IN 3	12	OUT3
4	IN 4	13	OUT4
5	IN 5	14	OUT5
6	IN 6	15	OUT6
7	IN 7	16	OUT7
8	IN 8	17	OUT8
9	GNDWE	18	COMMON

Technical specification:

Number of inputs	8
Input type	Optoinsulated
Input voltage range	5 - 24V DC
Wire intersection	0.14 ÷ 0.5mm ²
Output number	8
Output type	Reed relay operating contacts
Wire intersection	0,14 ÷ 0,5mm ²
Load-current capacity	50V DC - 0,2A

Caution:

If **WE 8** module is installed in it does not allow to install **AN** analogue output module and/or **PK 1** module of relays.

30.5. WE4 - 4 inputs/4 outputs module

WE 4 module comprises 4 optoinsulated inputs and 4 optoinsulated outputs of reed relays. The input / output wires are led out via a gland on the back wall of the housing (3m length).

30.5.1. Technical specification

Parameters of outputs	
Quantity of outputs	4
Type of outputs	Reed operation contacts
Wire diameter	0,14 - 0,5mm ²
Maximal load-current contact capacity	0,2A DC
Maximal forward voltage	50V DC
Parameters of inputs	
Quantity of inputs	4
Input type	Optoinsulated
Wire diameter	0,14 – 0,5mm ²
Control voltage range	5 -24V DC

30.5.2. Colours of cables for I/O:

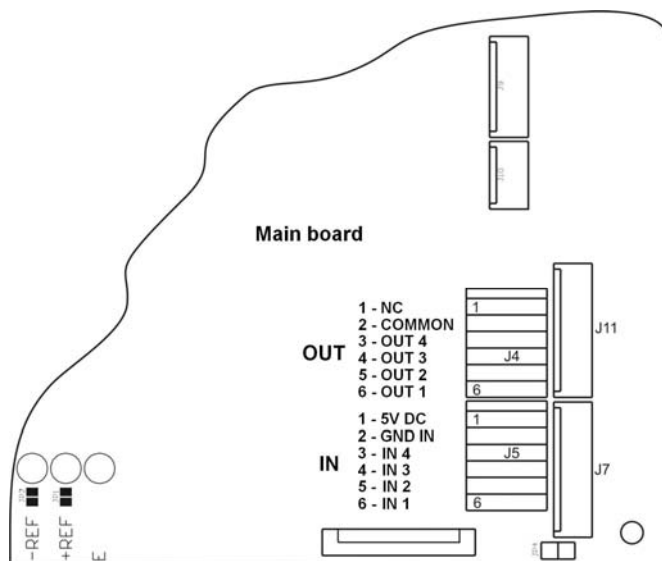
COLOURS FOR OUTPUT CABLES		COLOURS FOR INPUT CABLES	
colour	description	colour	description
BROWN	N/A	BROWN	+5V DC (from the terminal)
GREEN	COMMON	GREEN	GND WE
YELLOW	OUT4	YELLOW	IN4
WHITE	OUT3	WHITE	IN3
GREY	OUT2	GREY	IN2
PINK	OUT1	PINK	IN1

30.5.3. Installing method in PUE C41H indicators

WE4 modules are equipped in two cables, one for inputs and one for outputs.

Installing procedure:

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. If inputs and outputs are installed at the same time, dismount I/O socket and install a PG9 gland instead. LED the **PT0016** cable through it (the same way like in case of relay outputs). If only 4 inputs or 4 outputs are installed unplug one of the existing glands and led the **PT0016** cable through it.
4. Connect the **PT0016** cable to the **J5** connector for inputs or to the **J4** for outputs, on the main board of PUE C41H.
5. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
6. Screw down the back wall.



Installing WE4 modules on the main board of PUE C41H

30.6. DP1 – module for an additional platform



DP1 PCB

DP1 modules increase functionality of PUE C41H indicators by possibility of adding an additional platform. It is intended to mount inside the indicator. DP1 modules require an additional gland to lead in the platform cable.

30.6.1. Technical specification

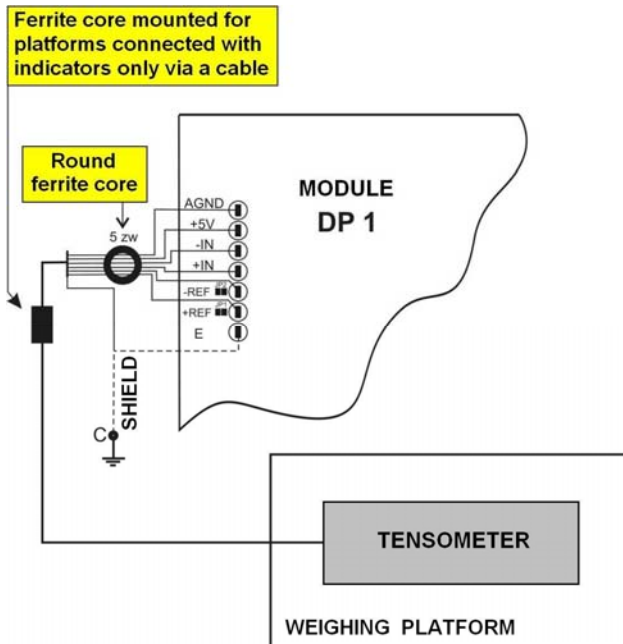
Useful number of internal divisions	8 388 608
OIML class	III
Number of verification divisions	6 000
Maximal change of input signal	19mV
Maximal voltage per verification divisions	3,3 μ V
Minimal voltage per verification divisions	1 μ V
Minimal tensometer impedance	90 Ω
Maximal tensometer impedance	1200 Ω
Tensometer excitation voltage	5V
Types of tensometers	4 or 6 wires + shield

30.6.2. Colours of wires

RADWAG Designation	Colour	Designation of soldering pads on PCB's.
+INPUT -INPUT +OUTPUT - OUTPUT +SENSE - SENSE SHIELD	brown green yellow white grey pink yellow-green	+5V AGND +IN -IN +REF - REF (according to the rule of connecting shields)

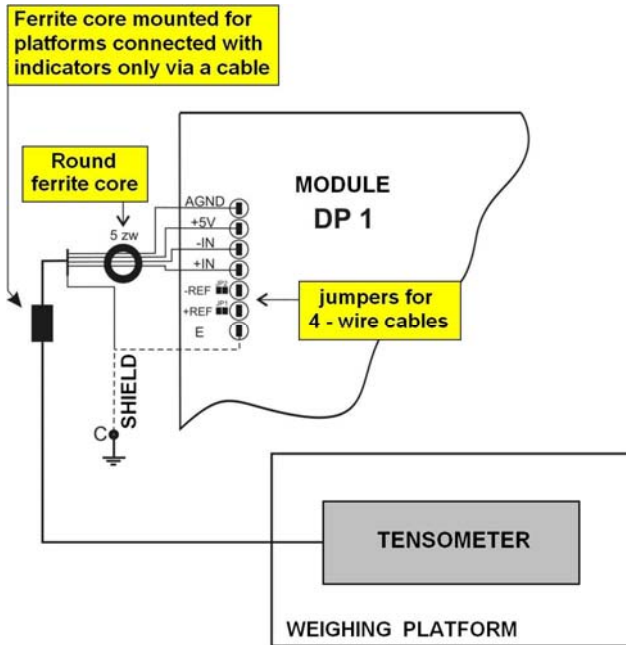
30.6.3. Connecting additional platforms

Connecting 6-wire tensometers



E - tensometer cable shield
 REF+ - "SENSE +" from tensometer (JP1 not soldered)
 REF- - "SENSE -" from tensometer (JP2 not soldered)
 IN+ - "OUTPUT+" from tensometer
 IN- - "OUTPUT-" from tensometer
 +5V - "INPUT+" from tensometer
 AGND - "INPUT-" from tensometer

Connecting 4-wire tensometers



E - tensometer cable shield
 REF+ - solder jumper JP1
 REF- - solder jumper JP2
 IN+ - "OUTPUT+" from tensometer
 IN- - "OUTPUT-" from tensometer
 +5V - "INPUT+" from tensometer
 AGND - "INPUT-" from tensometer

The rules of connecting shields from tensometer cable

For assuring appropriate operation use the description below to connect the shield of the tensometer properly. In both cases (6- and 4-wire cables) the same way rule are valid:

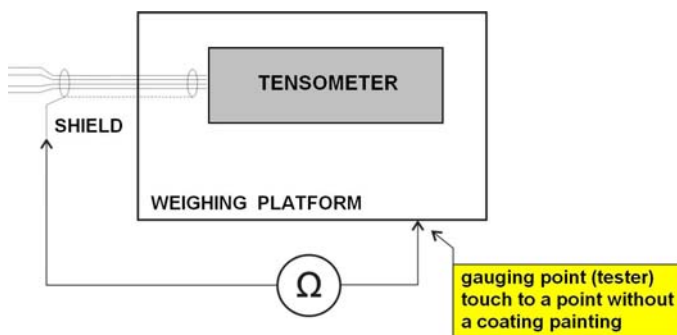
	platforms connected to indicators in metal housing via a cable only	platforms electrically connected to indicators' metal housings e.g. pillars , racks
Load cells without internal shield connection to the tensometer body	POINT C	E
Load cells with internal shield connection to the tensometer body	POINT C	POINT C

Point C – screwed terminal electrically connected to the metal housing of the indicator (possible using of soldering eye)

E – soldering pad on a **DP1** PCB

The way of checking connection between the shield and the tensometer body

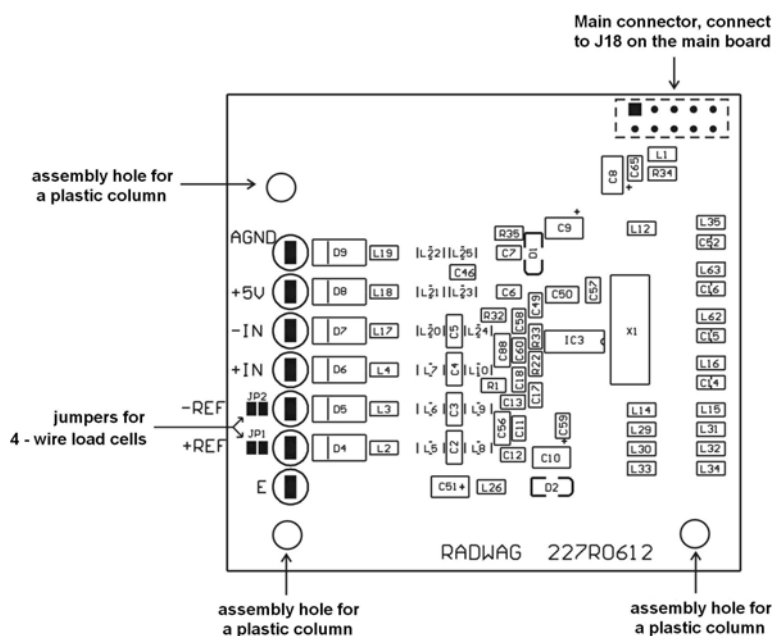
Use an ohmmeter for this purpose.



30.6.4. Installing in PUE C41H housing

DP1 modules are intended to mount inside PUE C41H housings. It is mounted to the main board to the 10-pin **J18** connector. For **DP1** module an additional gland is installed on the back wall of the housing.

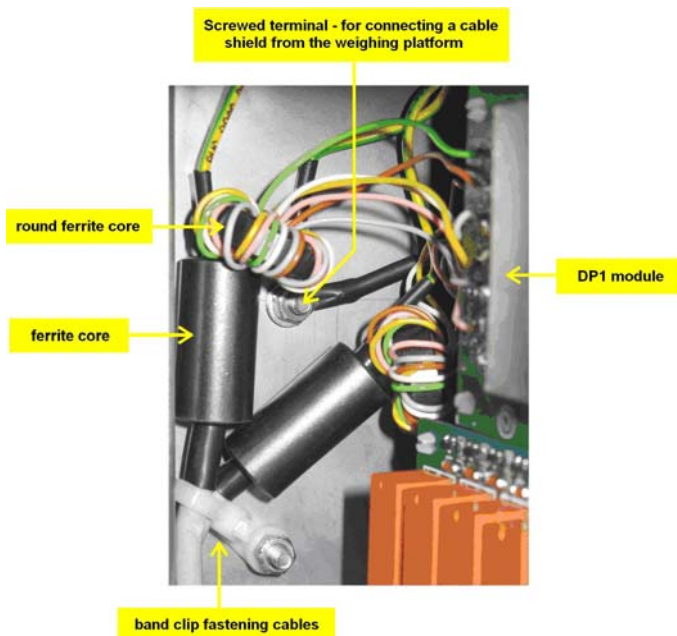
1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Install your module in **J18** on the main board;
4. During installation turn your attention to plastic columns. They should be placed one side in mounting holes in the main board and the other side in the mounted module **DP1**.



Installing DP1 module on the main board of PUE C41H

5. Led a tensometer cable through the PG7 gland next to the gland of main platform;
6. Put on a ferrite core on the cable (core of appropriate internal diameter);
7. Turn the wires on the ferrite core (5 turns);

8. Solder the wires to the pads on the DP1. **Use soldering iron (no solder guns or Rother inductive devices);**
9. Fasten the cable to the housing using a band clip (to the screwed terminal on the back wall of the housing);
10. Screw down the back wall.



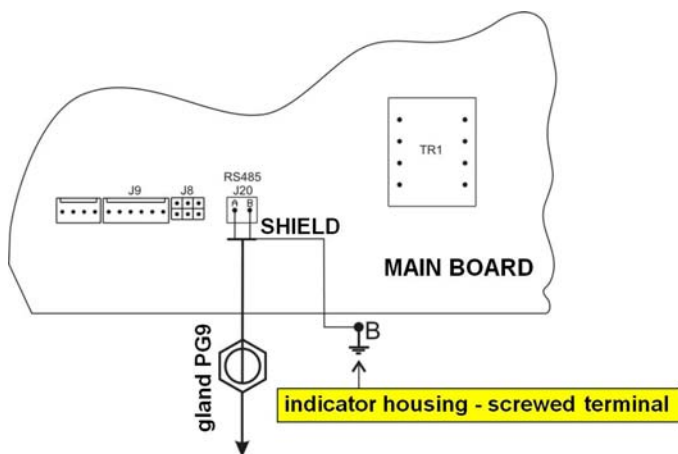
30.7. RS485 led out via RS 1D gland

A version with the **RS485** interface led out via a gland (in the standard solution RS485 is present in a socket). A 3m cable is led out through the gland.

30.7.1. Installing inside the PUE C41H housing

1. Unplug the scale from mains;
2. Unscrew and take off the back wall of the housing;
3. Unplug one of the unused glands and led out the **PT0012** cable through it;

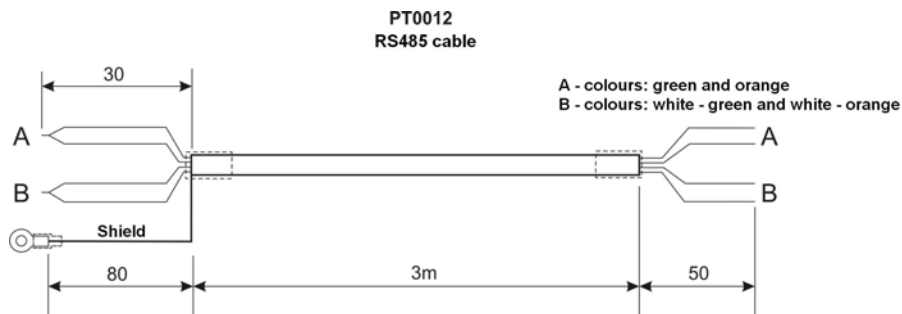
4. Connect the **PT0012** cable to the **J20** connector (ARK type) on the main board of PUE C41H:



***PT0012** cable connecting to the main board of PUE C41H*

5. Connect the **PT0012** shield to the housing (4mm screwed terminal on the back wall)
6. The cable connect to the group of wires (unhook band clips fastening the group of wires, lay the cable and hook the band clips). Band clips of multiple usage;
7. Screw down the back wall.

30.7.2. RS 485 - PT0012 cable drawing



31. COMMUNICATION PROTOCOL

31.1. General information

- A. A character protocol scale-terminal has been designed for communication between RADWAG scales and external devices via RS-232 interface.
- B. It consists of commands sent from an external device to the scale and a responses from a scale.
- C. Responses are sent every time after receiving a command (reaction for any command).
- D. Using commands allows users to receive some information about the state of scale and/or influence the operation e.g.: Requesting weighing results, display control.

A set of commands for RS interfaces:

Commands	Description of commands
Z	Zeroing
T	Tarring
S	Send the stable result in basic unit
SI	Send the result immediately in basic unit
SU	Send the stable result in current unit
SUI	Send the result immediately in current unit
C1	Switch on continuous transmission in basic unit
C0	Switch off continuous transmission in basic unit
CU1	Switch on continuous transmission in current unit
CU0	Switch off continuous transmission in current unit
K1	Lock the scale keyboard
K0	Unlock the scale keyboard
S1	Start dosing/filling
S0	Stop dosing/filling
DH	Set lower threshold
UH	Set upper threshold
ODH	Read lower threshold
OUH	Read upper threshold
PC	Send all implemented commands

Notice:

1. *Each command have to be terminated in CR LF*
2. *The best Policy for communication is not sending another command until the former answer has been received.*

31.2. Respond message format

After sending a request message you can receive:

XX_A CR LF	command accepted and in progress
XX_D CR LF	command completed (appears only after XX_A)
XX_I CR LF	command comprehended but cannot be executed
XX _ ^ CR LF	command comprehended but time overflow error appeared
XX _ v CR LF	command comprehended but the indication below the
XX _ OK CR LF	Command done
ES_CR LF	Command not comprehended
XX _ E CR LF	error while executing command – time limit for stable result exceeded (limit time is a descriptive parameter of the scale)

XX - command name
_ - substitutes spaces

31.3. Command's description**31.3.1. Zeroing**

Syntax **Z CR LF**

Possible answers:

Z_A CR LF - command accepted and in progress
Z_D CR LF - command completed
Z_A CR LF - command accepted and in progress
Z_^ CR LF - command comprehended but zero range overflow appeared
Z_A CR LF - command accepted and in progress
Z_E CR LF - time limit for stable result exceeded
Z_I CR LF - command comprehended but cannot be executed

31.3.2. Tarring

Syntax: **T CR LF**

Possible answers:

- T_A CR LF** - command accepted and in progress
- T_D CR LF** - command completed
- T_A CR LF** - command accepted and in progress
- T_v CR LF** - command comprehended but tare range overflow appeared
- T_A CR LF** - command accepted and in progress
- T_E CR LF** - time limit for stable result exceeded
- T_I CR LF** - command comprehended but cannot be executed

31.3.3. Send the stable result in basic unit

Syntax: **S CR LF**

Possible answers:

- S_A CR LF** - command accepted and in progress
- S_E CR LF** - time limit for stable result exceeded
- S_I CR LF** - command comprehended but cannot be executed
- S_A CR LF** - command accepted and in progress
- MASS FRAME** - mass value in basic unit is returned

Frame format:

1	2-3	4	5	6	7-15	16	17	18	19	20	21
S	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S CR LF – computer command

S _ A CR LF - command accepted and in progress

S _ _ _ _ - _ _ _ _ _ 8 . 5 _ g _ _ CR LF – command done, mass value in basic unit is returned.

31.3.4. Send the result immediately in basic unit

Syntax: **SI CR LF**

Possible answers:

- SI_I CR LF** - command comprehended but cannot be executed at the moment
SI_A CR LF - command accepted and in progress
MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S I CR LF – computer command

S I _ ? _ _ _ _ _ 1 8 . 5 _ k g _ CR LF - command done, mass value in basic unit is returned immediately.

31.3.5. Send the stable result in current unit

Syntax: **SU CR LF**

Possible answers:

- SU_A CR LF** - command accepted and in progress
SU_E CR LF - timeout while waiting for stable results
SU_I CR LF - command comprehended but cannot be executed
SU_A CR LF - command accepted and in progress
MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	space	stability	space	sign	mass	space	unit			CR	LF

Example:

S U CR LF – computer command

S U _ A CR LF - command accepted and in progress

S U _ _ _ - _ _ 1 7 2 . 1 3 5 _ N _ _ CR LF - command done, mass value in current unit is returned.

31.3.6. Send the result immediately in current unit

Syntax: **SUI CR LF**

Possible answers:

SUI CR LF - command comprehended but cannot be executed

SUI A CR LF - command accepted and in progress

MASS FRAME - mass value in current unit is returned immediately

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

Example:

S U I CR LF – computer command

S U I ? _ - _ _ _ 5 8 . 2 3 7 _ k g _ CR LF - command executed and mass returned

31.3.7. Switch on continuous transmission in basic unit

Syntax: **C1 CR LF**

Possible answers:

C1_I CR LF - command comprehended but cannot be executed

C1_A CR LF - command comprehended and in progress

MASS FRAME - mass value in basic unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	I	space	stability	space	sign	mass	space	unit			CR	LF

31.3.8. Switch off continuous transmission in basic unit

Syntax: **C0 CR LF**

Possible answers:

C0_I CR LF - command comprehended but cannot be executed

C0_A CR LF - command comprehended and executed

31.3.9. Switch on continuous transmission in current unit

Syntax: **CU1 CR LF**

Possible answers:

CU1_I CR LF - command comprehended but cannot be executed

CU1_A CR LF - command comprehended and in progress

MASS FRAME - mass value in current unit is returned

Frame format:

1	2	3	4	5	6	7-15	16	17	18	19	20	21
S	U	I	stability	space	sign	mass	space	unit			CR	LF

31.3.10. Switch off continuous transmission in current unit

Syntax: **CU0 CR LF**

Possible answers:

CU0_I CR LF - command comprehended but cannot be executed

CU0_A CR LF - command comprehended and executed

31.3.11. Lock the scale keyboard

Syntax: **K1 CR LF**

Possible answers:

K1_I CR LF - command comprehended but cannot be executed

K1_OK CR LF - command executed

Caution:

This command is not remembered after restart

31.3.12. Unlock the scale keyboard

Syntax: **K0 CR LF**

Possible answers: **K0_OK CR LF** – command in progress

31.3.13. Initiating of dosing/filling

Syntax: **S1 CR LF**

Possible answers:

S1_I CR LF - command comprehended but cannot be executed

S1_OK CR LF - command in progress

31.3.14. Stop of dosing/filling

Syntax: **S0 CR LF**

Possible answers:

S0_I CR LF - command comprehended but cannot be executed

S0_OK CR LF - command in progress

31.3.15. Set lower threshold

Syntax: **DH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

DH_OK CR LF - command executed

ES CR LF - command not comprehended (wrong mass format)

31.3.16. Set upper threshold

Syntax: **UH_XXXXX CR LF**, where: **XXXXX** – mass format

Possible answers:

UH_OK CR LF - command executed

ES CR LF - command not comprehended (wrong mass format)

31.3.17. Read lower threshold

Syntax: **ODH CR LF**

Possible answers: **DH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
D	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right

Unit - 3 characters justified to the left

31.3.18. Read upper threshold

Syntax: **OUH CR LF**

Possible answers: **UH_MASA CR LF** - command executed

Frame format:

1	2	3	4-12	13	14	15	16	17	18	19
U	H	space	mass	space	unit			space	CR	LF

Mass - 9 characters justified to the right

Unit - 3 characters justified to the left

31.3.19. Send all implemented commands


Syntax: **PC CR LF**

Possible answers:

PC_A "Z,T,S,SI,SU,SUI,C1,C0,CU1,CU0,PC,K1,K0,DH,UH,ODH,OUH,S1,S0" – command executed, the indicator have sent all the implemented commands.

31.4. Manual printouts / automatic printouts

Users can general manual or automatic printouts from the scale.

- Manual printouts can be performed after loading the pan and stabilizing indication by pressing .
- Automatic printouts can be performed only after loading the pan and stabilizing indication.

Notice:

If a scale is verified printouts of immediate values are blocked.

Format frame:

1	2	3	4-12	13	14	15	16	17	18
stability	space	sign	mass	space	unit			CR	LF

Stability character	[space] if stable [?] if not stable [^] if an indication over the range [v] if fan indication below the range
sign	[space] for positive values or [-] for negative values
mass	9 characters justified to the right
unit	3 characters justified to the left
command	3 characters justified to the left

Example 1:

_____ **1 8 3 2 . 0 _ g _ CR LF** – the printout generated from the scale after pressing ENTER/PRINT.

Example 2:

? _ - _____ **2 . 2 3 7 _ l b _ CR LF** - the printout generated from the scale after pressing ENTER/PRINT.

Example 3:

^ _____ **0 . 0 0 0 _ k g _ CR LF** - the printout generated from the scale after pressing ENTER/PRINT.

31.5. Continuous transmission

The indicator can work in a continuous transmission mode. It can be switched on or off in parameters or using RS232 commands.

Frame format sent by the indicator when continuous transmission is set:

1	2	3	4 -12	13	14	15	16	17	18
stability	space	sign	mass	space	unit			CR	LF

Stability character	[space] if stable [?] if not stable [^] if an indication over the range [v] if fan indication below the range
sign	[space] for positive values or [-] for negative values
mass	9 characters justified to the right
unit	3 characters justified to the left
command	3 characters justified to the left

31.6. Configuring printouts

If some information included are redundant or not sufficient and there is a necessity of changes you can design a non-standard printout. There is possible to create up to four standard printouts (see the chapter. 17).

32. ERROR MESSAGES

ERROR "XXX" ESC – RETURN TO PREVIOUS SETTING

(where: XXX – parameter name) – confirmed with **ENTER** of a wrong value in the user's menu,

- Err2** - value beyond the zero range,
- Err3** - value beyond the tare range,
- Err4** - Calibration mass or start mass adjustment error ($\pm 1\%$ for weight, $\pm 10\%$ for start mass),
- Err5** - Mass of a single piece lower than the 0.1 of scale division,
- Err6** - mass of all pcs (declared as standard) lower than one division,
- Err8** - tarring/zeroing operation time exceeded,
- NULL** - zero value from the AD converter,
- FULL2** - measurement range overflow,
- HI** - display range overflow,
- LH**- start mass error, the mass on the weighing platform is beyond the acceptable range ± 10 of start mass

33. TROUBLE SHOOTING

Problem	Cause	Solution
Scale switches off automatically	„t1” parameter set to „YES” (Power save)	In <P9 OTHERS> change <P9.3 AUTO SWITCH.> to „NO”
„LH” appears on the display	Weight pan not empty when switching on	Unload the pan. Indication returns to zero

34. TECHNICAL PARAMETERS

34.1. Checkweighing scales of T series

Scale type:	WPW 0,6/T1	WPW 1,5/T1	WPW 3/T1
Max capacity	0,6 kg	1,5 kg	3 kg
Readability	0,2 g	0,5 g	1 g
Tare range	-0,6 kg	-1,5 kg	-3 kg
Pan size	200×150 mm		
Work temperature	-10° to +40°C		
Interfaces	RS 232, RS 485		
Ingress protection rating	IP 66/67		
Power supply	230V AC, 50Hz		
Battery operation time	Up to 9 h		
Display	LCD with backlight		

Scale type:	WPW 6/T2	WPW 15/T2	WPW 15/T3	WPW 30/T3	WPW 60/T3
Max capacity	6 kg	15 kg	15kg	30 kg	60 kg
Readability	2 g	5 g	5 g	10 g	20 g
Tare range	-6 kg	-15 kg	-15 kg	-30 kg	-60 kg
Pan size	250×300 mm		410×410 mm		
Work temperature	10° to +40°C				
Output signal	RS 232, RS 485				
Ingress protection rating	IP 66/67				
Power supply	230V AC, 50Hz				
Battery operation time	Up to 9 h				
Display	LCD with backlight				

34.2. 1-load-cell scales of H series

Scale type:	WPW 3 H1/K	WPW 6 H2/K	WPW 15 H2/K	WPW 15 H3/K	WPW 30 H3/K
Max capacity	3 kg	6 kg	15 kg	15 kg	30 kg
Readability	1 g	2 g	5 g	5 g	10 g
Tare range	-3 kg	-6 kg	-15 kg	-15 kg	-30 kg
Pan size	150x200 mm	250 x 300 mm		410 x 410 mm	
Work temperature	- 10° to +40 °C				
interfaces	RS 232, RS 485				
Ingress protection rating	IP 66/67				
Power supply	230V AC 50Hz, accumulator 6V 3Ah				
Battery operation time	Up to 9 h				
Display	LCD				

Scale type:	WPW 60 H3/K	WPW 150 H3/K	WPW 60 H4/K	WPW 150 H4/K
Max capacity	60 kg	150 kg	60 kg	150 kg
Readability	20 g	50 g	20 g	50 g
Tare range	-60 kg	-150 kg	-60 kg	-150 kg
Pan size	410 × 410 mm		500 × 500 mm	
Work temperature	- 10° to +40 °C			
interfaces	RS 232, RS 485			
Ingress protection rating	IP 66/67			
Power supply	230V AC 50Hz, accumulator 6V 3Ah			
Battery operation time	Up to 9 h			
Display	LCD with backlight			

Scale type:	WPW 150 H5/K	WPW 300 H5/K	WPW 60 H5/K	WPW 150 H6/K	WPW 300 H6/K
Max capacity	150 kg	300 kg	60 kg	150 kg	300 kg
Readability	50 g	100 g	20 g	50 g	100 g
Tare range	-150 kg	-300 kg	-60 kg	-150 kg	-300 kg
Pan size	600 x 600 mm			800 x 800 mm	
Work temperature	-10° to - +40 °C				
interfaces	RS 232, RS 485				
Ingress protection rating	IP 66/67				
Power supply	230V AC 50Hz, accumulator 6V 3Ah				
Battery operation time	Up to 9 h				
Display	LCD with backlight				

34.3. 1-load-cell scales of C/K series

Scale type:	WPW 6 C1/K	WPW 15 C1/K	WPW 30 C1/K	WPW 60 C2/K
Max capacity	6 kg	15 kg	30 kg	60 kg
Readability	2 g	5 g	10 g	20 g
Tare range	-6 kg	-15 kg	-30 kg	-60 kg
Pan size	290x360 mm			400x500 mm
Work temperature	-10° to +40 °C			
interfaces	RS 232, RS 485			
Ingress protection rating	IP 66/67			
Power supply	230V AC 50Hz, accumulator 6V 3Ah			
Battery operation time	Up to 9 h			
Display	LCD with backlight			

Scale type:	WPW 150 C2/K	WPW 300 C2/K	WPW 150 C3/K	WPW 300 C3/K
Max capacity	150 kg	300 kg	150 kg	300 kg
Readability	50 g	100 g	50 g	100 g
Tare range	-150 kg	-300 kg	-150 kg	-300 kg
Pan size	400x500 mm		500x700 mm	
Work temperature	-10° to +40 °C			
interfaces	RS 232, RS 485			
Ingress protection rating	IP 66/67			
Power supply	230V AC 50Hz, accumulator 6V 3Ah			
Battery operation time	Up to 9 h			
Display	LCD with backlight			

35. APPENDIX A

Barcode scanner programming (related to PowerScan QS600+ scanners).

Use special barcodes from „**Programming Guide**” to set all the necessary data.

Default baud rate of scanners is 9600 bit/sec.

1. Switching on EAN-13 code standard
Symbology Selection

SET
Enable EAN-13
END

2. Setting a necessary prefix for HTX
Label Transmit Configuration, Settings Global Prefix(es)

SET
Set Prefix
01 - this is a necessary prefix for HTX:
00 01 - HEX
END

3. Setting a necessary suffix for HTX.
Label Transmit Configuration, Setting Global Suffix(es)

SET
Set Suffix
CR - this is a necessary suffix for HTX:
0D hex
END

4. Setting label ID location

SET
LABEL I.D. = NONE
END

Notice:

RADWAG standard is - symbology specification – LABEL I.D. = NONE

36. APPENDIX B

CITIZEN label sprinter setting.

Baud rate – 9600bit/sec

Parity – no

Number of bits – 8

Stop bits - 1

Flow control - no

IEEE 1284 – switched on

RS232 information from a test printout

[Interface Menu]

RS-232C Baud rate :**9600bps**

RS-232C Parity :**None**

RS-232C Length :**8 bit**

RS-232C Stop bit :**1 bit**

RS-232C X-ON :**No**

IEEE 1284 :**On**

The way of printing the above printout and setup changes are described in CITIZEN user's manuals

37. APPENDIX C

ZEBRA label sprinter setting.

Baud rate – 9600b/sec

Parity – none

Number of bits – 8 bits

Stop bit – 1 bit

RS232 information from a test printout

Serial port : **9600, N, 8, 1**

The way of printing the above printout and setup changes are described in ZEBRA user's manuals.

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